DOCUMENT RESUME

ED 293 053 CG 020 701

AUTHOR Hawkins, J. David; Nederhood, Britt
TITLE Handbook for Evaluating Drug and Alcohol Prevention Programs: Staff/Team Evaluation of Prevention Programs (STEPP).
INSTITUTION REZA Corp., Washington, DC.
SPONS AGENCY Alcohol, Drug Abuse, and Mental Health Administration (DHHS/PHS), Rockville, MD. Office for Substance Abuse Prevention.
REPORT NO DHHS-ADM-87-1512
PUB DATE 87
CONTRACT NIDA-271-85-8401
NOTE 122p.
AVAILABLE FROM Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.
PUB TYPE Guides - General (050) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *Alcohol Abuse; Delivery Systems; *Drug Abuse; Drug Education; *Prevention; *Program Effectiveness; *Program Evaluation; Program Improvement; *Self Evaluation (Groups); Substance Abuse

ABSTRACT

This handbook was developed for the purpose of providing drug and alcohol prevention program managers with a comprehensive yet easy-to-use tool to help their evaluation efforts. The handbook emphasizes program staff members working together as a team. It provides instruments and activities for determining program effectiveness, as well as documenting and monitoring the provision of services. These topics are discussed: (1) the rationale for program evaluation; (2) the question of whether experts are needed to conduct the evaluation; (3) the beginning steps in evaluation; (4) evaluation design; (5) outcome measurement; (6) measurement of level of effort, participation, and quality of program delivery; (7) organizing and collecting data; (8) data analysis; and (9) reporting and using results of the evaluation. References, reference tables, an annotated bibliography, an evaluation think sheet, a survey instrument used yearly by the National Institute on Drug Abuse to collect information from a nationwide sample of high school seniors, and 13 figures are included. (ABL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

STEPP Checklist

Six Steps to Evaluating Your Program

Step 1: **Choosing an Evaluation Question** **Date Completed:** _____

[Meeting 1: Week 1 of Evaluation Year]

Questions to Be Answered

_____ Part 1: Review the model of your program.
_____ Part 2: Raise questions about your program. What do you want to know?
_____ Part 3: Discuss effort, effectiveness, and efficiency in relation to your questions.
_____ Part 4: Identify a purpose and audience for the evaluation.
_____ Part 5: Choose the question your evaluation will answer.

Step 2: **Designing an Evaluation** **Date Completed:** _____

[Meeting 2: Week 2 of Evaluation Year]

Evaluation Design

_____ Part 1: Consider possible evaluation designs.
_____ Part 2: Choose the design that fits your question and situation.
_____ Part 3: Define your sample.

Step 3: **Designing Measurement Instruments** **Date Completed:** _____

[Meeting 3: Week 3 of Evaluation Year]

Outcome Measurement

_____ Part 1: Measuring the results of your program.
_____ Part 2: Deciding on background data.

[Meeting 4: Week 4 of Evaluation Year]

Implementation Measurement

_____ Part 3: Consider instruments for measuring implementation.

Step 4: **Building a Data Collection Plan** **Date Completed:** _____

[Meeting 5: Week 5 of Evaluation Year]

Organizing and Collecting Data

_____ Part 1: Plan how to collect the data. How often will you collect it? Who will do it?
_____ Part 2: Pilot test instruments and collection plan.

[Meeting 6: Week 6 of Evaluation Year]

Troubleshooting Measures and Collection Procedures

_____ Part 3: Monitor field reports on measures and procedures. Adjust as needed.

Step 5: **Analyzing the Data** **Date Completed:** _____

[Meeting 7: Week 7 of Evaluation Year]

Planning for Data Analysis

_____ Part 1: Choose analysis procedures.
_____ Part 2: Design tables and graphs for reporting results.
_____ Part 3: Begin collection of data.
_____ Part 4: Monitor data collection regularly.

[Meeting 8: Week 45 of Evaluation Year]

Analysis of Data

_____ Part 5: Analyze data.

Step 6: **Reporting the Findings** **Date Completed:** _____

[Meeting 9: Week 47 of Evaluation Year]

Reporting the Findings

_____ Part 1: Complete "dummy" graphs and tables for reporting findings and plan presentation of data.
_____ Part 2: Role play presentation to target audience, adding data needed to respond to audience questions.
_____ Part 3: Report your findings to identified audiences.

[Meeting 10: Week 50 of Evaluation Year]

Making Use of What You've Learned

_____ Part 4: Adjust your program based on what you've learned.

Celebrate Your Accomplishments!

Note: Meetings 1, 5, and 9 should involve your whole staff.

Handbook for Evaluating Drug and Alcohol Prevention Programs

Staff/Team Evaluation of Prevention Programs (STEPP)

by

J. David Hawkins, Ph.D.
Britt Nederhood, Ph.D.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

Office for Substance Abuse Prevention
Division of Demonstrations and Evaluation
5600 Fishers Lane
Rockville, Maryland 20857

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

This publication was developed under NIDA contract number 271-85-8401 with the REZA Corporation, Washington, D.C., for the Office for Substance Abuse Prevention. Stephen E. Gardner, D.S.W., served as the Project Officer. The authors are Dr. J. David Hawkins and Dr. Britt Nederhood of Developmental Research and Programs, Inc., Seattle, Washington

Permission has been obtained from the copyright holders to reproduce material which appears on pages 44, 45, 51, 53, 92, 110 and 111. Further reproduction of this material is prohibited without specific permission of the copyright holders. All other material contained in this publication is in the public domain and may be used and reprinted without specific permission. Citation as to source is appreciated.

DHHS Publication No. (ADM) 87-1512
Printed 1987

Contents

Introduction v

Chapter 1. Evaluation: Why Bother? 1

Chapter 2. Don't We Need Experts? 5

Chapter 3. How Do We Begin? 8

Chapter 4. Evaluation Design 22

Chapter 5. Outcome Measurement 34

Chapter 6. Implementation (Effort) Measurement 41

Chapter 7. Organizing and Collecting Data 48

Chapter 8. Data Analysis 59

Chapter 9. Making Use of What You've Learned 71

References 76

Annotated Bibliography 78

Appendix A. Evaluation Think Sheet 81

Appendix B. Survey Instrument 91

Appendix C. Reference Tables 110

Index 112

C

List of Figures

Page

Figure 1. Program Model 10

Figure 2. Program Model: Parent Prevention Program 10

Figure 3. Relationship of Effort, Effectiveness, and Efficiency to a Program Model 12

Figure 4. Purpose/Audience Matrix 19

Figure 5. Outcomes of a School and Family Training Program in Refusal Skills 28, 29

Figure 6. Random Sampling Populations 32

Figure 7. Social Development Model of Adolescent Drug Use 36

Figure 8. Instrument to Measure Program Effort 44

Figure 9. Instruments to Measure Staff Activity 45

Figure 10. Classroom Observation Instrument 51

Figure 11. Data Collection Plan 55

Figure 12. Proportion of Population Using Drugs: Three Sample Graphs 60

Figure 13. Effect of Teaching Problem-Solving Skills on Suspension Rates of Seventh Grade Students (1985-86): A Contingency Table 63

Introduction

School administrators, teachers, parents and community leaders need to determine if their drug and alcohol prevention programs are making a difference. Questions need to be answered: Are attitudes about drug and alcohol use changed? Is knowledge about harmful effects of drugs and alcohol increased? What factors are correlated to drug and alcohol use? Are drug and alcohol use reduced, prevented?

These are some of the questions that can be addressed through a program evaluation. Answers will help to make programs accountable to their community and can provide managers important feedback about their program operation.

This handbook was developed for the purpose of providing program managers with a comprehensive yet easy-to-use tool to help their evaluation efforts. The handbook emphasizes program staff members working together as a team. It provides instruments and activities for determining program effectiveness, as well as documenting and monitoring the provision of services.

We hope that readers of this handbook will view program evaluation as an important resource and also as a process with which they can feel comfortable and successful.

Reed Bell, M.D.
Director
Office for Substance Abuse Prevention

Chapter 1

Evaluation: Why Bother?

Preventive Services

Drug abuse preventive services seek to head off drug abuse problems before they occur, while treatment services are provided after an individual has developed a drug problem. Because they are provided before a problem exists, preventive services seek to decrease the likelihood that individuals will abuse drugs by addressing and reducing factors thought to increase the risks of abuse or by enhancing and promoting factors that are thought to inoculate people against drug abuse. In seeking to change the contributing conditions or risk factors for drug abuse, preventive services are provided in three ways: (1) direct services to target populations, (2) indirect services, such as sponsoring whole-community awareness programs, and (3) institutional change activities, such as campaigns to raise the drinking age, efforts to increase enforcement of drunk driving laws, or advocacy efforts to encourage schools to develop clear rules about drug use on campus. Preventive services often seek to alter the environmental conditions that contribute to substance abuse.

The idea of preventive services is appealing. Given the high personal, social, and dollar costs of drug abuse, it makes sense to try to prevent drug problems rather than simply waiting for them to happen. Some people argue that preventive approaches should cost less than treatment services, which must remediate damages that have already occurred. Yet the evaluation of preventive services is not easy. To show that preventive services are effective, it is necessary to show that something did not happen (i.e., drug abuse) that would have happened had the services not been provided.

When preventive services are not provided directly to individuals, evaluation becomes even more difficult. For example, the efforts of community-health projects seeking to prevent substance abuse through promotion of healthy habits cannot be measured by hours of service to individual clients, nor can their effects be determined by following up individual clients or checking their hospital and police records at periodic intervals after treatment. Another difficulty is that the timeframe for measuring effects of preventive services may be lengthy. For example, the ultimate effectiveness of programs that help elementary school students develop skills to avoid trouble in hopes of preventing drug abuse may not be observable for several years.

If the promise of preventive services is to be recognized and realized, however, agencies must plan, implement, and operate them to achieve the desired effects without undersired results. Without evidence of effects, government and private funding sources are often reticent to invest in preventive services; administrators have difficulty knowing how to divide resources among preventive and treatment programs; and staff have few guides for orienting the preventive services for maximum effectiveness. Thus, it is essential for the organization committed to performance to develop methods for monitoring and evaluating its own prevention activities. The purpose of this handbook is to provide you with the methodology to evaluate your prevention program.

Evaluation

Think about "evaluation." What mental picture comes to your mind? When asked to make a mental picture of evaluation, people often conjure up amazing visions. Some of the visions of evaluation that have been offered by participants in evaluation workshops include:

- *Flossing Your Teeth* (You hate to do it, but you know it should be done.)
- *A Processed American Cheese Sandwich on White Bread with Mayonnaise and No Lettuce in an Airport Cafeteria* (If you had your choice, you'd never look at it, let alone buy it.)
- *Porcupines Making Love* (There's a lot of promise, but it sure seems risky trying it.)

- *Doing Your Taxes When You Know You Won't Get a Refund* (Something to put off until the last possible minute.)

- *Doing a Stage Performance and Having Your Clothes Fall Off* (Submitting to the risk of public exposure.)

Close your eyes and picture your image of evaluation . . . . Now, take a minute to describe your image of evaluation in the space here.

Why does evaluation, the process of seeing if we accomplished what we set out to achieve, generate such cynical thoughts in our minds?

This may happen, in part, because the words "evaluation" and "accountability" have gone hand in hand. In an era of tight resources for human service programs, getting and keeping the money needed to provide important preventive services to people has become a battle of epic proportions. In this context, evaluation can appear to those being evaluated as the ultimate strategic weapon in the hands of the enemy. Being evaluated can feel like giving an occupation force information on the whereabouts of your fellow fighters. French and colleagues (1983) report the case of a program director who was told by his State agency that "his program would be evaluated by his funding source, on its terms, with its evaluator, according to unofficial, legally questionable, and secret standards."

Given these conditions, you're at risk if you do evaluation and in jeopardy if you don't. Participating in evaluation can take valuable time from service and administrative work; it can produce information that looks bad, information that may be put in the hands of those with the greatest power to harm your program through budget cuts. On the other hand, if you resist evaluation, you open yourself up to charges of not caring about the quality of your services, or of failing to be fully accountable for the public funds you've been trusted to manage.

What is a self-respecting human service organization to do about evaluation? One solution is to pull apart those synonyms — evaluation and accountability — and to think about and use evaluation differently. In the most blunt terms, it is possible to co-opt the concept of evaluation. A major difference exists between *being* evaluated and *doing* an evaluation.

It is possible to use evaluation as a tool to answer those nagging questions you've had in the back of your mind about your own prevention program — Is this really working? Self-evaluation allows you to ask the questions you want to ask to get answers you can use for your own purposes. This approach allows you to drop the image of strategic information in enemy hands and to use that information yourself.

What is this suggested approach to self-evaluation? First, it is important to think about what evaluation really means. *Evaluation is collecting and using information to answer questions about*

your program. It is a way of providing more information about the program than was available before. When you think about evaluation in this way, it becomes clear that the problems evaluations cause result not because people ask questions about their programs, but because of two concerns: (1) who typically asks the questions and (2) why they want to know the information.

When funding sources ask questions because they might want to cut off your funding, evaluation can be pretty threatening. When outside evaluators ask questions that provide information of marginal utility to the program, the process seems, at best, a waste of time.

In self-evaluation, when you and your staff/team ask the questions, and the answers are used for your purposes to improve your prevention services, evaluation becomes a way to identify and solve problems, a way to make prevention services more effective.

The fact is that those of us engaged in drug abuse prevention constantly have questions about what and how we're doing. We may wonder:

- Is our school-based prevention curriculum really helping to prevent kids from using alcohol and other drugs?
- Is our public service campaign reaching teenage girls at risk of smoking?
- Should we continue to offer awareness sessions for parents of high school students on recognizing signs and symptoms of drug use or provide skills for parents of fifth and sixth grade children to reduce the chances their children will experiment with drugs?
- How can we reach more parents with our parenting program?

Prevention workers are continuously asking such questions. They must decide what prevention activities to initiate and maintain and how to organize themselves to provide them. Too often decisions must be made without relevant needed information.

Evaluation, in this handbook, is a tool for informing your own decisions — a tool to use in problem solving. Through the process outlined in this handbook, you will learn to do and use evaluation to identify and answer the questions you need to address in order to make better decisions in seeking to improve the effort, effectiveness, and efficiency of your preventive services.

By gathering information for your own problem solving and troubleshooting, you will also take a proactive position on evaluation. Self-assessment and self-improvement activities become powerful, tangible evidence that you do care about the quality of your services.

Such extra effort can also demonstrate program results and may ensure survival. Further, an effort to improve services based on identified problem areas demonstrates a commitment to accountability.

Another reality of the social services marketplace is the competition to provide social services. Given expanding options for the investment of service dollars, how are you going to distinguish your services and your program from other programs? Schools are being pushed to offer drug abuse prevention programs, and parents are becoming an effective lobby for programs that can demonstrate that they make a difference. What evidence can you produce to show that your program is superior to those offering alternative visions of prevention or intervention? Prevention program evaluation

enables you to present "tested technology" and ultimately to speak with confidence about reductions in drug abuse associated with your program.

Wouldn't it be nice to be able to make statements like this about your program?

> *Overall, the smoking prevention program succeeded in reducing the incidence of new smoking by about 58 percent. (Botvin and Eng 1982)*
>
> *Midway through seventh grade (only) 8 percent of the primary prevention and 37.5 percent of control students had smoked in the previous month. (Schinke and Gilchrist 1983)*
>
> *The results . . . support earlier findings that programs addressing social influences on smoking onset can effectively prevent increased experimentation during preadolescent years . . . . The . . . smoking prevention program can be regarded as successful in getting young experimental smokers to quit earlier . . . . (Best et al. 1984)*

These are actual statistics reported about prevention programs after self-evaluations were done. Statements like these encourage support for these programs.

More important, a program of ongoing self-evaluation speaks to your ability to meet a community's changing need. By showing how its prevention activities address community substance abuse problems, a dynamic, questioning prevention program can raise community concern and weave its programs into the very fabric of school, family, and community life.

Chapter 2

Don't We Need Experts?

If these arguments for self-evaluation make sense, then one thing becomes clear: prevention programs have to be responsible for their own evaluation. As a prevention program manager, *you* must ask the questions about your program if they're to be the right questions to inform the decisions you have to make in seeking to improve your drug abuse prevention efforts. Evaluation is, in a sense, your research and development arm. This handbook provides you one set of skills you need to be a successful manager of a prevention program. Clearly, evaluation isn't the only tool you need to be a good manager, but it is a powerful one!

The STEPP (Staff/Team Evaluation of Prevention Programs) handbook is designed to be used by community groups and coalitions, schools, human service organizations, and any other groups working to prevent drug abuse. You do not have to work in an agency or school to use this handbook. A group of concerned citizens can use this handbook as well as the staff of a human service agency. The handbook will walk you and your staff or team through six steps to a successful program evaluation. Chapters 3 through 9 will carry you from the first questions you raise about your prevention program to a fully completed evaluation whose results are being used by your target audience to inform decisionmaking. The STEPP handbook operates at both an individual and an organizational level. First, you will have an opportunity to learn the steps in the evaluation process by applying them to a question that you have about your program. You will also learn how to apply the process in a staff/team evaluation involving your whole prevention group.

If you are a program director or coordinator, you will be assisted in this staff/team process by 10 meeting agendas that have been designed to maximize your staff or team's involvement in the evaluation process.

Each chapter will be organized around a step in the evaluation process. Relevant meeting agendas will come at the end of each chapter. The handbook is designed to be interactive; application exercises provided in chapters 3-9, when completed, will document each of the steps. These exercises are boxed in to separate them from the narrative. In addition, the application exercises are combined in an evaluation think sheet (appendix A) that will help you in planning future evaluations. This handbook is both a how-to-do-it text and the documentation of what you've accomplished. If you take the time to complete each of the steps, you will, by the end of your first evaluation year, have instituted a process that will result in ongoing self-evaluation of the effectiveness of your prevention work.

A time line is presented for a 52-week evaluation project. The actual length of your evaluation year may vary with the questions you select, but you will have the tools you need to complete the task.

Starting anything new takes time; self-evaluation is no exception. By pacing yourself, stepping through the process of becoming a self-evaluating organization on a reasonable time line, you will be able to add self-evaluation to your group's agenda without overwhelming anyone.

To show you how each step in the process can be applied to actual prevention programs, examples of the self-evaluation process as applied to prevention programs will be provided.

Space limitations prevent answers to all the questions you may raise about program evaluation. Specifically, you may not find the exact measurement instrument, evaluation design, or statistical test you need in the text. When that happens, you will be referred to the Annotated Bibliography in the back of the handbook for recommendations of resources that provide more detailed and complete information.

"But don't we need experts?"

That is the first question heard at the suggestion of self-evaluation, and the answer is often "no!" The expertise you need to answer most questions about the effectiveness of your programs can be found in the pages of this handbook and in the easily accessible sources of evaluation design and statistical analysis information in the Annotated Bibliography.

If you do have a question that seems beyond the scope of this handbook or need a design that is more complex than those discussed here, two additional resources should be pursued before you consider hiring consultants.

First, consider the skills and contacts of your own program team or staff. A major benefit of doing program staff/team evaluation is the sense of ownership among prevention workers that is created when you validate them by saying "We have a problem; how can we solve it together?" Staff or team input is invaluable in identifying the questions you need to ask and in ensuring that quality data will be collected to answer those questions. Further, you may find that people in your prevention group have skills that are not tapped by their current tasks. Members of your group may have a background in psychology, statistics, or research design that can be valuable in planning your evaluation. Or, you may discover that a team member has graphic arts skills that will be valuable in designing the format for reporting your findings, or a marketing background that will assist you in getting "the message" out. Your team or staff also represents an extended professional network. The husband, wife, or friend of a team member may have some special expertise that can greatly help your evaluation effort. A staff/team evaluation allows everyone in the prevention group to share the vision of self-improvement and a commitment to performance.

Second, if you are located close to a college or a university that has a sociology, educational psychology, psychology, social work, biostatistics, or public health department, don't overlook the possibility of involving a professor or graduate student in your search for knowledge about your program. University faculty actively search for interesting questions that can be the source of research data for them or a research topic for one of their students. Your challenge may be their opportunity. But remember, this is your evaluation. You will want to maintain control of the evaluation and keep the focus on the questions you want to answer.

To be successful in staff/team evaluation, you do need three prerequisite qualities: curiosity, a desire to improve, and hard-headed caring.

"How much will this cost?"

Some groups avoid evaluation because they think they cannot afford it. It is true that rigorous evaluations of large-scale prevention projects can be expensive. However, it is also possible to do self-evaluation projects with a very small financial outlay, especially if you minimize your reliance on paid consultants. Using this handbook, you will be able to formulate your own evaluation questions and develop your own evaluation designs and measurement instruments. If you can enlist the assistance and support of your group and those organizations with whom you collaborate in prevention, you will be able to collect the data you need very inexpensively. Actual dollar costs can be limited to the costs of typing and reproducing data collection instruments and entering and analyzing the information you collect. Important evaluation questions can be answered if you can identify the resources to cover these costs, which may total $1,000 or less depending on the scope of your project.

Before you begin, do you have questions that you expect this handbook to answer for you? List these questions here.

1.

2.

3.

You have just completed the first step in this handbook's self-evaluation plan. When you finish working your way through the STEPP handbook, return to this page to see if it has fulfilled your expectations.

Chapter 3

How Do We Begin?

Step 1: Choosing an Evaluation Question

Part 1: Renew the Mission

The first step in successful evaluation is building ownership among all those who will be involved in the process. If the service providers responsible for collecting data are not participants in the evaluation planning, they will find it difficult to find time to collect information that takes away from more immediate service responsibilities. Without reliable data, your evaluation planning is a waste of time. If your board is not convinced that the question you seek to answer is an important one, they may fail to enthusiastically back your efforts to spread your prevention work even if the results are positive. Staff/team evaluation reflects a shared commitment to improvement of prevention and should involve the full range of participants in your prevention group or organization.

Begin your STEPP process with an all-team or all-staff meeting. It is here that you start to build the support necessary to successfully complete the evaluation., Do not expect prevention workers, who may feel overburdened by case loads or program responsibilities, to respond to the word "evaluation" with a standing ovation. A prevention manager must sell the merits of evaluation on the common goals of program quality and interest in improving prevention services.

If the audience for this evaluation is broader than your own program staff, as it usually is, you will find it valuable to involve representatives of other organizations or agencies with an interest in your program to share in a meeting where you generate the questions you want your evaluation to answer. If the people you want to use your evaluation information share in helping to formulate the evaluation question from the beginning, you will build a positive reception for your findings. Strategies for expanding the audiences for your evaluation are discussed in the following excerpt from Hawkins and Sloma (1978).

Determining the Evaluation Questions

(Adapted from Hawkins, J. David, and Sloma, Donald. Recognizing the organizational context: A strategy for evaluation research. *Administration in Social Work* 2(3), 1978.)

Traditionally, program funders or top administrators have decided what questions they want answered in evaluation studies. Evaluators have responded with research designs to answer these questions. By designing the evaluation to answer administrators' or funders' questions, evaluators have implicitly allied themselves in a social system with one set of participants, those who funded or commissioned the evaluation.

This situation creates problems if funders,' administrators,' and social service practitioners' values, goals, and objectives are not identical. In such cases, the latter group may perceive giving requested information as a threat to their activities. They may try to prevent funders or administrators from obtaining such information or subvert the evaluation in a number of ways including inaccurate information.

We suggest that the process of defining evaluation questions be a negotiation process.

As a first step in this negotiation process, all parties who have an interest in the program's operation — policymakers, funders, elected officials, program management, line staff, and even, in many programs, clients — should respond to two questions: (a) What is the program trying to accomplish? (b) What information do members of each group need in order to make decisions about or to operate the program more effectively or efficiently?

On the basis of these questions, the evaluation manager should develop a tentative evaluation plan aimed at addressing the information needs of as many of the concerned groups as possible. The tentative plan should contain several elements. First is a listing of those who provided input to the plan's content. This listing gives members of the various audiences a preliminary sense of whether representatives of their interests and points of view have at least been consulted prior to development of the tentative plan. Second, the plan should contain a conceptual model of the program or system of programs to be evaluated. The third portion of the plan should list the evaluation questions raised by participants that the evaluation proposes to address and briefly describe the methods that will be used to obtain answers to these questions. Finally, the evaluation plan should contain a listing of questions raised by potential audiences that the evaluation does not propose to answer using the proposed evaluation plan. This listing of questions not addressed provides various actors with a clearer understanding of the limits of the proposed evaluation study.

What questions should be included, and what evaluation questions should be omitted? The first rule of thumb would be to include questions that were asked by members of several potential audiences of the evaluation. To the extent that many consumers agree on the importance of finding the answer to a particular question, the evaluation manager can increase the likelihood that the evaluation study will be seen as properly focused and useful. We also suggest that the evaluation manager be careful to include at least one question asked by representatives of each of the audiences. In this way, the evaluation manager decreases the likelihood that one audience will see the study as totally without merit and attempt to sabotage it.

The experience of the authors in designing evaluation projects using this process suggests that total disagreement between funders and program personnel about evaluation questions may be rare. Where agreement is possible, several benefits result from proceeding as we have outlined. First, to the extent that common questions for the evaluation are identified, the evaluation manager increases the likelihood of staff cooperation in the use of investigatory tools. Because the evaluation investigates staff's concerns, staff are more likely to agree to steps to aid the study. Thus the process should ultimately allow evaluation managers to increase their methodological rigor. Second, the evaluation is cleared, at the outset, from the charge of irrelevance, of having focused on the wrong questions. By making input from all interested parties part of an explicit, documented negotiation process, the evaluator is able to place responsibility on those critical of the questions addressed for not taking a more active role in designing the study when it was offered. Third, the process has a clear developmental function. It encourages practitioners to define clearly what their programs seek to accomplish and what results they expect and identifies gaps between various parties' conceptualizations of the program and program purposes.

Most people who work to prevent alcohol and other drug abuse come to that work with a sense of mission, a vision of a better world. Your group has been drawn to your prevention program by a promise that their work under your guidance will help to create a community/society where fewer people are harmed by the abuse of drugs. However, sometimes something happens in the first few years of working on any tough problem that can wear the glitter off the goal. People begin to see themselves in the more confined perspective of "my job." People can lose sight of their ideals as they slug away at the very real chores of lining up refreshments for parenting classes, convincing teachers that they can "sacrifice" 30 minutes of their class time once a week for a drug education program, or arguing with the local TV station manager to run prevention spots. It is important to regularly renew the common mission that brought you all together. An evaluation talks to the goals that are common among evaluation workers — the need to know that what prevention workers are doing has made a difference in the lives of people.

An excellent vehicle for renewing the mission and putting your evaluation effort in the context of accomplishing that mission is the use of a simple visual model of your prevention program to be evaluated. This model shows your actual current program and what you expect it to achieve. The model need not be highly detailed. A useful format is a simple systems model (see figures 1 and 2).

Figure 1. — Program Model

	Program of	Immediate	
Resources →	Services →	Results →	Outcomes

The model should show resources, the program of services offered using these resources, immediate results you expect to follow your services, and desired outcomes over the longer term. Resources are the people, money, contacts, and connections that you put together into a program of services. The program of services consists of the actual prevention activities you offer. The immediate results your prevention program seeks to achieve may be better skills among teenagers in refusing drug offers or improved family communication. Ultimately, you expect these immediate results to reduce drug use or abuse among your target population. This reduction is the desired outcome of your prevention work.

Figure 2 illustrates a program model for a parent-focused prevention program.

Figure 2. — Program Model: Parent Prevention Program

Resources →	Program of Services →	Immediate Results →	Outcomes
Trainers Curriculum package PTA sponsorship and volunteer recruiters	Five weekly parenting classes	Parents will: 1. Establish clear family expectations about alcohol and other drugs in their families. 2. Teach their children how to avoid trouble and still have fun and friends. 3. Keep family conflict from getting out of hand. 4. Strengthen family bonding by increasing children's roles in the family.	Fewer children will experiment with alcohol, marijuana, or tobacco before leaving junior high.

Presenting a visual model of your program serves two important purposes. It focuses your group on the common goals of your program while showing members how their individual contributions fit in the bigger picture, and it provides a framework for raising specific questions about the program — "What do we need to know about our program and how it is working?" For example, a question that might be raised about the parenting program in figure 2 is: "Did parents who participated in the program actually establish clear family expectations about alcohol and other drugs?" In other words, did the program of parenting classes actually produce desired immediate results?

At this point, draw a simple model of your prevention program following the example displayed in figure 2. In this model, show the following:

- The resources you use to provide prevention services
- The program of services
- The immediate results you expect your services to achieve
- The longer term outcomes you think will ultimately follow

A Model of Our Prevention Program

Resources →	Program of Services →	Immediate Results →	Outcomes

Part 2: Raise Questions about Your Program

Once everyone understands the model that shows your program, you're ready to engage in the most important step of any evaluation — identifying the questions you want to answer. What do we need to know to improve our program, our service delivery, our outcomes, etc . . . ?

Think about the nagging questions you personally have about your program or agency? Write two or three of them down in the space here.

I Wish I Knew

1.

2.

3.

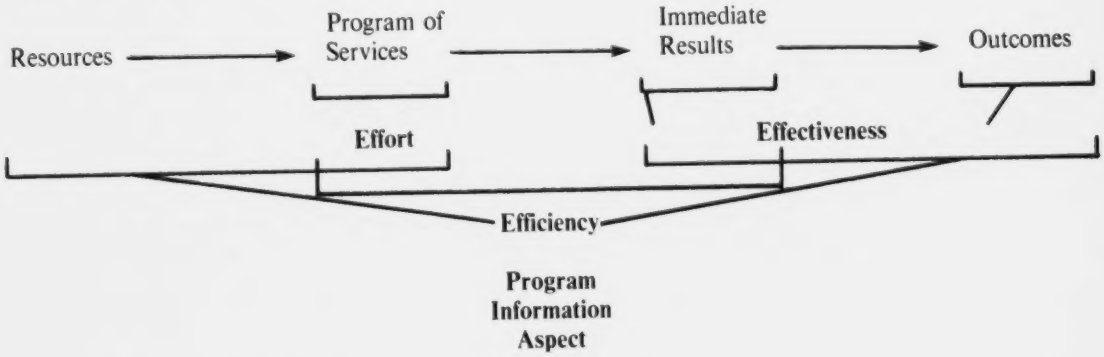
As you walk through the STEPP handbook to familiarize yourself with the steps in self-evaluation, you will probably seek to answer one of the questions you've come up with here. In using the staff/team evaluation process, however, you may want to avoid coming to a meeting for identifying questions armed with the evaluation question you want to address. You may find that a question that is important to you is viewed as less important to the rest of your group. Or, as other questions are brainstormed by your group, you may see a question that is more important than the one you initially identified.

The process of brainstorming questions, in itself, will identify a broad range of concerns. That's healthy! It testifies to a staff/team's desire for improvement. It is also grist for an important discussion of program priorities. What are the priority questions that we need to answer? Which questions seem to go together? What do we really need to know to make the important decisions we face as a group or organization? Through this sharing of concerns, your prevention group will walk in each other's shoes, you will strengthen the bond between individuals, you will validate the importance of all members of the group, and, most important, you will build group commitment to your program while you are planning for self-evaluation.

Part 3: Discuss Effort, Effectiveness, and Efficiency in Relation to Your Questions

Look at the questions you have jotted down about your program. Evaluation questions can be asked about any of the parts of a prevention program.

Figure 3. — Relationship of Effort, Effectiveness, and Efficiency to a Program Model



Look at the program model in figure 3. One kind of question you may have is about program services: "What services did we actually provide and to whom?" Such questions are about program *effort*. An example of an effort question is: "How many seventh grade students at Sylvan Junior High were trained to use refusal skills this year?" An effort question about a parent training program is: "On the average, how many of the five sessions did the parents attend?"

Another question you may ask is whether you achieved the immediate results you wanted. As noted earlier, you may ask: "How many parents in our prevention class actually talked with their children about family rules on alcohol and drugs following the session?" This is a question of program *effectiveness* in achieving immediate results. In this example, the outcome the program sought was to increase family communication on expectations around drug use.

You may also want to know if the desired outcomes of your prevention work were achieved. For example: "Were rates of drug initiation among junior high school students lower in families that

attended the prevention class than in families that did not?" This is also a question of program *effectiveness*, a question of effectiveness in changing drug use outcomes.

A third kind of question is about the *efficiency* of your prevention work. This includes cost-per-unit of service and cost related to benefits achieved. For example, you may ask: "How much did it cost per student to provide our drug abuse curriculum in the schools?" This is a question of the relationship between resources and program services (cost-per-unit of service). What was the cost in resources to produce the services that resulted? Alternatively, you may want to know how much it cost to reduce the rate of smoking among sixth grade students by 25 percent. This is a question of the relationship between resources, program services, and outcomes (cost-benefit analysis). Often, before you can answer efficiency questions, you must have the answers to effort and effectiveness questions.

Look at the questions you jotted down earlier:

- Do you see any effort questions?
- Do you see any effectiveness questions?
- Do you see any efficiency questions?

Some of your questions may not fit. They don't seem to be questions about program effort, effectiveness, or efficiency. Perhaps you asked "Where can we get the resources to hire more parent trainers?" or "How can we convince the legislature to fund our program for next year?"

Not all your questions are program evaluation questions. Evaluation questions ask how well the programs offered or planned are working. These are the questions that can be answered by following the STEPP process.

In order to lead your staff or team in identifying evaluation questions for self-evaluation, it will be useful to think of some effort, effectiveness, and efficiency questions of your own.

Identifying Questions of Effort

Measuring effort involves the documentation of staff time and resources invested in delivering services and counting the services delivered. This measurement activity is frequently referred to as monitoring. Monitoring can include the recording of quantitative (How many clients did we serve?) as well as qualitative (How were services organized or provided?) information.

Many organizations already have systems in place to monitor their prevention services. If the information generated by a monitoring system is to be used for program improvement, it is important to find some incentive for people to record the information accurately. Ensuring the collection of the required information by mandating it as an additional job requirement probably will not guarantee good reporting and may not provide information in which you have confidence. The STEPP process of involving staff in planning for information collection, and thinking about how the information can be used to enhance services, should encourage more accurate monitoring in your organization. Such a process will also show that the administration is truly interested in the information for improving the program rather than simply for monitoring staff compliance with their job descriptions.

Effort evaluation is sometimes called process evaluation. It measures the process (program of services)

that leads to immediate results and long-term outcomes. Refer back to your prevention program model, and take a few minutes to jot down two questions you have about your program of services, i.e., your program's efforts.

Here are some examples to get you started.

- How many awareness sessions did we provide to community groups last year?
- How many teachers did we train to use drug prevention materials in their classes?
- How much of our preventive service time is spent in planning? How much time in service delivery?
- How many young people are we reaching through our peer-to-peer program?
- What groups or organizations are we serving or collaborating with in our preventive services?
- Are we doing what we planned in the prevention area?
- How many families received prevention workbooks through our program last year?

Effort Questions About My Program

1.

2.

Identifying Questions about Effectiveness

Perhaps the most important question about any prevention program is: "Did it work?" You may want to know: "Did our peer counseling program reduce alcohol use in the school? Did the teacher training project prevent drug experimentation among seventh grade students?" These are questions of program effectiveness. To answer these questions, which ask whether the program caused the desired outcomes, usually requires an experimental design by which it can be determined that the interventions led to the observed results.

A closely related question can be answered much more easily, however. This is the question of what happened to persons or conditions that were targeted by a program. For example, "Did the students of teachers who used the prevention curriculum in their classrooms report lower levels of drug use?" An answer to this question does not require proof that the desired outcomes were caused by the program but simply asks if these outcomes were achieved. This type of information has been called outcome enumeration, which tells us whether things got worse or better after the program was initiated.

Answering effectiveness questions is called an outcome evaluation. Outcome evaluations assess

either the immediate results or longer term outcomes of a program or both.

A difficulty in assessing outcomes of prevention efforts is created by the fact that the desired results may not be observable for some time. As an example, consider a training program in refusal skills offered to third and fourth grade teachers as a drug abuse prevention strategy. Students of these teachers might not be expected to experiment with psychoactive drugs, even if not exposed to the program, for 4 years or more. Self-evaluating prevention organizations may not have the resources to follow these students over a long period to measure their future drug use.

Two implications are important. First, even without assessing the ultimate outcome of student drug use, other intermediate results can be assessed. Did teachers learn the techniques presented? Did students learn to use the skills taught? Were their attitudes toward drug use or their intentions regarding future drug use affected by the program? Even without long-term outcome data, answers to these questions can indicate how well the teacher training program is achieving immediate results and how it can be improved. Second, when long-term outcomes cannot be assessed by your organization, it becomes important to select prevention techniques that have either a strong conceptual foundation or have been shown by research to be promising or effective in achieving their goals. It is not sufficient for the group that seeks to launch an effective prevention program simply to offer those services with which staff are familiar or comfortable, and to assume optimistically that they will result in effective prevention. Prevention services should address known risk factors for drug abuse and/or use approaches that have demonstrated positive results if the expected outcomes are unmeasurable or will occur only far in the future. (For summaries of known risk factors for drug abuse and their implications for prevention, see Hawkins et al. 1985 and 1986.)

The fact that prevention efforts may not directly serve individual clients also can make it difficult to assess the results of prevention activities. Indirect services, such as teacher training or advocacy efforts designed to develop alternative programs for students, may seek to prevent drug abuse. Since training and advocacy efforts do not directly serve individual students, however, it becomes more difficult to use information about those served to discover program results. Yet measurement strategies (chapters 5 and 6) are available to provide effectiveness information in spite of these difficulties.

Effort and effectiveness questions are closely linked. If you measure only the effort of your program, without assessing effectiveness, you will know how much work you have done. You will not know, however, if your work made any difference.

If you measure only effectiveness, without measuring the effort that produced the observed results, you might not be able to identify exactly what produced those results.

Nevertheless, questions of effectiveness are fundamental questions in and of themselves. By answering effectiveness questions, you can discover whether risks for drug abuse and drug abuse itself are being reduced or prevented by your prevention efforts. Take a few moments to write down two questions you have about your prevention program's effectiveness. Here are some examples to get you started.

- How effective is our holiday share-a-ride program in preventing driving while under the influence of alcohol or other drugs?
- Do more students than before perceive health risks associated with marijuana use following implementation of our new school-based prevention curriculum?

- How effective is our parenting program in preventing early experimentation with drugs among children of participants?

Effectiveness Questions About My Program

1.
2.

Identifying Questions about Efficiency

Efficiency is a question of the cost of reaching your desired outcomes. That cost can be in terms of dollars, staff time, curriculum materials, planning time, client investment, or any other measurable program resource. It is important to know that your drug education program costs a school district $157 per classroom to implement. It is equally important to know that a competing curriculum costs only $112 per classroom to implement. Which curriculum is more efficient will depend on the relationship between effort (curriculum costs and teacher time) and effect (relative reduction in student drug use).

Efficiency studies imply comparisons with standards. A prevention program can be compared with other programs (external) or previous efforts (internal), or comparisons can be made among approaches. For example: Is it more efficient to have our prevention workers or classroom teachers present prevention curriculum in schools? While the costs of having prevention workers from your group teach the curriculum may be higher, they may also produce more positive effects than regular classroom teachers because of their commitment, knowledge, and skills in delivering the curriculum. This is a question of efficiency.

Efficiency questions are of three types: Are resources used efficiently to maximize services? Are services efficient in producing immediate results? Does achieving these immediate results produce the desired long-term outcomes efficiently?

Take a few moments to write down two efficiency questions you have about your prevention program. Here are some examples of efficiency questions to get you started.

- Does peer counseling or our refusal skills curriculum result in the larger reduction in students' intention to use drugs per-dollar-invested?
- Which parent recruitment strategy, student poster contests or a friendly letter-writing assignment, is the most efficient way to bring parents into our program?
- Given our limited funds, is it more efficient to serve every other student referred to our peer assistance program, or to serve half of them now and delay treatment to the other half?

Efficiency Questions about My Program

1.

2

Mastering the Three E's

Here is a test of your ability to identify effort, effectiveness, and efficiency questions.

Place an A by a sentence if it is asking an effort question.
Place a B by a sentence if it is asking an effectiveness question.
Place a C by a sentence if it is asking an efficiency question.

_____ 1. Are parents satisfied with our elementary school drug education program?

_____ 2. Which recruitment approach yields the most volunteer crisis line workers at the least cost?

_____ 3. Does student participation in our peer counseling program reduce the reported use of marijuana and inhalants?

_____ 4. How many parent classes did we provide in the 1985-86 school year?

_____ 5. Which was the most cost-effective recruitment strategy for parent participation in classes, food raffles or free child care?

_____ 6. Do police patrols reduce the number of alcohol-related accidents among young people?

_____ 7. Did radio advertising or community flyers do the best job of advertising our community drug-free day?

_____ 8. How much influence did classroom visits by professional athletes have on student attitudes about drug abuse?

Answers: B,C,B,A,C,B,C,B

How did you do? If you answered seven or eight questions correctly, you're ready to lead your staff in a brainstorming session to identify your organization's questions for self-evaluation. If you missed more than two answers, review the discussion of the "three E's" to reinforce your understanding of effort, effectiveness, and efficiency.

Which Questions Are Most Important?

By now you've identified several questions about your program that you might answer through the STEPP process. Choosing which of these questions to actually address is the next self-evaluation task. You should follow a simple rule here. Answer only questions that will provide information that you will use. Before you set about designing a self-evaluation plan, you should know how you plan to use the information provided.

Part 4: Identifying a Purpose and Audience for the Evaluation

With the exception of doctoral dissertations, little market exists for questions that have an unidentifiable utility and an audience of one. When you choose a question for your evaluation study, you want a question that has stature — a question that will repay the effort you and your team will invest in obtaining its answer. To make sure you have a question worth answering, compare the top priority questions you're considering in light of these three:

1. What do we need to know about our program to solve a problem we have identified?

2. When we have the information, who will be interested in knowing it?

3. Why do we need to know this? What can we do differently with this new information?

The purpose/audience matrix in figure 4 will help you decide whether you have a use for the information you might gather in answering the questions you've listed, and who your intended audience will be. If you have decided that funding is a major problem of your prevention work, but the question you've chosen would not be of interest to those who might provide such funding, you should consider a different question. If you are considering more than one question to be answered in this year's evaluation, complete the matrix for each question as a means of deciding which question will best serve the goals of your organization.

Figure 4.—Purpose/Audience Matrix

Before deciding on an effectiveness question, identify why the information is needed. Why do you need to answer this question? What could you do with the information? This matrix attempts to help you clarify answers to these questions by outlining five possible uses to which information may be put in an agency and seven possible audiences to whom the information might be addressed. The list is not exhaustive. You may want to add another purpose or audience that you think is important.

Place an "x" in each box of the matrix that represents the intersection of a purpose and audience for which you believe the answer to your question will be useful.

Audience	Purpose: Planning & Development	Management Control and Operational Decisions	Secure Funding	Public Relations	???
Management					
Service Providers					
Funders					
Other Agencies					
Public or Community					
Participants or Clients					
???					

The purpose/audience matrix identifies what you will do with the information you have gathered at the end of your evaluation. It allows you and your team to clarify the purpose of activities that may be tedious at times. If you don't know how you will use the information, don't bother to do a self-evaluation to answer the question!

Spending time on generating and defining a question for self-evaluation is a worthwhile investment, because good questions are the key to good evaluations. If you know how you will use the information you get in answer to your question, then the STEPP process will be worth the investment.

Part 5: Choose the Question Your Evaluation Will Answer

Now that you know the kinds of questions you may want to ask and the uses to which you could put the answers, you're ready to plan for your first group meeting on self-evaluation. Prepare for the meeting by completing a simple program model (see figure 1) for your own prevention program or programs. Then review staff/team agenda 1 at the end of this chapter in preparation for the meeting. Be prepared to suggest the questions you've already come up with and to listen to the questions others suggest for self-evaluation as you finalize the one question you will choose for your self-evaluation project.

If this is your first self-evaluation, we suggest that you and your staff/team start with an effectiveness question. By answering an effectiveness question, you will learn whether your program made a difference in reducing risk factors or in preventing drug abuse. By focusing on an important "bottom line" question, you will be able to maintain enthusiasm for the self-evaluation project. The remainder of this handbook is designed to help you plan and carry out a self-evaluation project to answer an effectiveness question about your prevention program.

What is the effectiveness question you've chosen for your evaluation?

Write ***THE QUESTION*** here.

STAFF/TEAM AGENDA 1
QUESTIONS TO BE ANSWERED

ATTENDING: For a small program, the whole staff or prevention team. For a larger program, representatives from each unit.

TIME: Schedule 2 hours.

OBJECTIVE: To reach consensus on a major question you will answer about your program by involving total staff/team or unit representatives in listing and prioritizing information needs.

I. **Renew the mission.** Each program should have a model — a schematic drawing of the goals of the program and the program linkages that enable those goals to be accomplished. This model helps each staff member to know how his or her part in the process helps achieve the intended outcomes of the program. The model gives your program a clear vision of its mission.

II. **What do you need to know** to improve your program, your service delivery, or your impact? (Brainstorm, using a chalk board, newsprint pad, or overhead projector.)

III. **Which of these questions can logically be combined?**

IV. **Categorize the questions** as questions of effort, effectiveness, or efficiency.

V. **Prioritize the questions** of greatest interest. (You will not have the resources to answer all the questions this year. A prioritized list will allow you to answer the most important question first.)

VI. **Share the process** of staff/team evaluation with your staff. Review the six-step monitoring chart/time line. Are these questions important enough to your success that your group is ready to pay the time cost to answer one of them?

If the answer is yes, continue to topic VII. If the answer is no, determine whether the reluctance is an energy issue or a matter of having not identified a truly important question. If the question is not important, return to the brainstorming step and start again. If staff concerns center on the time that an evaluation will consume, investigate just one question this year.

VII. **Decide** what you're going to do with the information you will generate by the end of the year and who you want to share it with. This decision will allow you to design an evaluation that will provide information that will be used. (Use the purpose/audience matrix in chapter 3 to help guide this discussion.

VIII. **Congratulate your staff or team!** (A small celebration is in order.) Set the date for your next meeting, and ask each member to come to the meeting with a list of resources both within the team and outside the group that might be used to help this evaluation effort.

Chapter 4

Evaluation Design

Step 2: Designing an Evaluation

An evaluation design allows you to answer the question "Compared to what?" To know if your program has made a difference, you must have some standard for comparison.

Have you prevented drug abuse? The answer to this question depends on what you define as your standard of success. Would you say your school-based prevention program was a success if 5 percent of the high school seniors in your community smoked marijuana daily? What if you knew that in 1979, 11 percent of the high school seniors in the United States smoked marijuana daily (20 times a month or more). Then would you say your program was a success? What if you knew that by 1985 only 4.9 percent of the seniors in the United States were daily marijuana users (20 times a month or more). Then would you view your program as a success?

All these comparisons are possible; all the data are correct. In the absence of a standard for comparison, how can you know if you're making progress in preventing drug abuse? You must compare your outcomes with something in order to decide if your prevention efforts have worked.

The most obvious and appropriate standard for comparison is to compare rates of the drug abuse problem after your prevention efforts with what things would be like if your prevention program weren't there, i.e., to ask "What would things have been like without us?"

For example, if you implement an alcohol abuse prevention curriculum in the eighth grade and find at the end of the year that the mean rate of alcohol use for students who experienced the curriculum was two times per week, is your program a success or a failure? It's hard to tell. Two times a week may seem to be a high rate. However, the school counselor may have placed all problem drinkers in your classes because she knew they would be receiving remediation for their problems. Perhaps the students who reported drinking twice a week after your program were drinking every day at the start of the school year. Without a means of comparison such as a pretest (mean rate of drinking before the program), you would not know that alcohol use had been reduced by 60 percent after a year's exposure to your curriculum. Can you say, then, that your curriculum "caused" a 60-percent reduction in student drug use? Not until you have made other comparisons. It could be that many eighth grade students in this school were heavy drinkers at the start of the school year, but teenage alcohol-related traffic deaths during the winter holidays led to a 60-percent reduction in alcohol use throughout the student body.

Evaluators call these historical effects—little events in time that change other things. Another example of a historical effect could be the institution of school locker checks or urinalysis screening procedures for suspected users in school, events that also may have reduced drug use in the school. There are possible explanations other than your prevention program for the outcomes you see, as discussed in the accompanying box. (These seven threats to validity were identified by Campbell and Stanley 1963.)

Seven Threats to Internal Validity

HISTORY: History refers to the unplanned events that occur between the time you take your first measurement (pretest) and the time you take your second measurement (posttest). The longer the period of time your evaluation covers, the more you need to be aware of possible historical effects.

MATURATION: Maturation refers to the developmental changes that naturally occur in your sample subjects. Things like growing older, more experienced, or more independent can have an effect on your outcomes that is independent of your prevention activities. For example, if you are measuring attitude change in middle school students, there is evidence that social attitudes of seventh grade students naturally become more negative in the course of a school year.

TESTING: Testing refers to the effects of taking a test upon the scores of a second testing. If you use before-and-after measurements, you must be aware of testing effects.

INSTRUMENTATION: Instrumentation effects occur when changes in a measurement instrument are made during the course of an evaluation or when observers or scorers either change or change their criteria for recording behaviors during an evaluation period.

STATISTICAL REGRESSION: Statistical regression operates when groups have been selected on the basis of their extreme scores. When remeasured, these extreme scores tend to regress toward the overall group average. In prevention work, if you chose to do a program with students who, on a pretest survey, indicated the strongest pro-drug-use attitudes, there is a good likelihood that these high scores would be less extreme on a second measurement, even without your program's intervention.

SELECTION: Any time the kind of people you select for your prevention group and the kind of people you select for your comparison/control group differ, you may be building selection bias into your evaluation. Random assignment is the best protection against selection effects.

EXPERIMENTAL ATTRITION: If you have unequal dropout rates or selective dropout from either your prevention group or your comparison/control group, attrition may affect the validity of your findings. If your prevention program were studying the effects of a parent program that attempted to change family attitudes about drug use, and parents of students who already used drugs found the classes so threatening that they dropped out, attrition would threaten the validity of your findings.

To get the best picture of what things would have been like without your program, in spite of history effects or selection problems or a lot of other things that could affect results, you should use a randomly assigned control group or some nearly equivalent group for comparison purposes. Deciding what to compare your program with is called designing the study.

Evaluation designs allow you to compare your results with: (1) past performance, (2) results from other groups having the same characteristics but experiencing different programs or no programs, or (3) results from groups that may differ from your prevention group in other ways. The stronger your evaluation design (the closer your prevention groups and comparison groups are to being identical in characteristics and nonprogram experiences), the more likely you'll be able to determine if your program made a difference. The next section reviews several of these basic designs.

Part 1: Consider Possible Evaluation Designs

Four types of designs that are used most frequently in the evaluation of prevention programs are covered here:

1. Pretest-Posttest Designs
2. Experimental Designs
3. Quasi-Experimental Designs
   a. Comparison Group Designs
   b. Time-Series Designs
4. Posttest-Only Designs

Pretest-Posttest Designs

A pretest-posttest design compares the same person or people at two points in time, before and after your program. The pretest-posttest design is not a strong test of the effectiveness of your program. For example, it does not control for other historical events that could have changed, such as rates of drug use in the general population. It can, however, tell you if those who participated in your program changed in the desired direction (i.e., if your program produces the "immediate results" you wanted). For example, if you had a drug abuse curriculum and you were unsure whether it was conceptually best for third or fourth grade students, you might give a pretest at both grade levels, teach the curriculum, and then give a posttest at both grade levels. By comparing the changes in drug knowledge, attitudes, and intentions to use drugs at each grade level from pretest to posttest, you would have more information on which to base a decision about the appropriate grade level for your curriculum.

With a pretest-posttest design, you never know if your program itself caused the changes you measure. What you use for comparison is information about the participants before they experienced your program. With a pretest-posttest design, you know how much your subjects changed on some measure during the period of your program. You will not know what caused the changes or if those who were not involved in the program might have changed as well.

A pretest-posttest design is diagramed like this:

O	X	O
Pretest	Prevention	Posttest
Observation	Service	Observation

Use of Control and Comparison Groups

One approach to design that can help you decide if your program caused changes in attitude or behavior is the construction of comparison or control groups as equivalent as possible to your program's participants on any variables that might influence outcomes.

Experimental Designs

Since it is often difficult to determine before the program which variables may be critical to match, a common method for gaining equivalent comparison groups is random assignment. Random assignment can be achieved simply through flipping a coin or drawing numbers from a list to divide participants into experimental or control groups. All true experimental designs employ some form of random assignment of participants. With random assignment, you have done the best you can to neutralize all differences between those who receive your preventive services and those with whom you plan to compare them. This gives you a high degree of confidence that any differences you find between groups after your program were caused by your program. The participants who don't receive the program are called control groups.

Here is an example of an experiment with random assignment to different groups. The Quinn County Prevention Coalition has two programs that are designed to encourage a healthy lifestyle for young people and discourage experimentation with drugs. One program is a teacher-taught curriculum that takes 10 hours of instruction time over a 5-week period. The second program is a Super Stars program that brings 10 role models into the classroom for 1-hour presentations over a 5-week period. You want to know which program has the greater impact on childrens' attitudes and behaviors.

The sophomores at Washington High School are randomly assigned to three health classes, all taught by the same teacher. You pretest all students in the three classes. In Class No. 1, the teacher teaches the health prevention curriculum. In a second class, Super Stars are brought in for 10 one-hour presentations; in the third class, the control group, the teacher conducts her normal health class. At the end of the 5-week period, you give all students a posttest and compare class rates of approval of drug use and self-reported use to determine which program has most positively changed student attitudes and behaviors. The design for the program would look like this:

Random Assignment	Pretest	X_1 X_2 C Prevention Service/ Control	O O O Posttest

A second example of an experimental design is a delayed prevention service design. In this model, everyone in your sample will receive the program, but at different times. In a delayed prevention design, you would randomly decide who receives prevention services first and who receives the delayed services. One of the challenges of this design is ensuring that those who receive the prevention program first don't influence the attitudes or behaviors of those who will get the program later. The design may be useful if you have limited staff available to offer a program, and workshops or presentations must be staggered through the year for different groups or classes. A delayed prevention design is diagramed here.

Random Assignment	Pretest	X Prevention Service	O Posttest		
			O Pretest	X Prevention Service	O Posttest

Random assignment is not always easy to attain. When you work in the prevention field in schools or public service agencies, it may not be practical to serve one-half or less of a population while withholding services to a second, equally deserving group. At first glance, random assignment seems unfair—it denies full access to prevention services for all the population. On the other hand, if you do not have enough resources to serve all the students in schools, or all the PTSAs in a district, random assignment, the flip of a coin, may be the fairest way to decide who should get prevention services, especially if they are in high demand. Moreover, it should be recognized that until a service has been proven effective, it is not clear that random assignment denies anyone a useful service. Yet organizational, political, and population targeting priorities may still prevent the use of experimental designs with random assignment in self-evaluations of prevention programs. In situations where random assignment is not possible, groups can be constructed that are comparable on some but not all variables. These nonrandomly assigned groups are called comparison groups. The designs that use comparison groups are quasi-experimental designs.

Quasi-Experimental Designs

Comparison Group Designs. Think back to the example of the Quinn County Prevention Coordinator with two programs she wanted to test. Suppose students were already assigned to health classes for the year, making random assignment impossible. She could consider several quasi-experimental designs. The coordinator could decide to compare the effects of Super Stars and the health curriculum without random assignment. She might give three groups a 5-week program: the new health curriculum to one class, the 10 hours of visits from the Super Stars to another, and the old health curriculum to a third class. At the end of the program, she could compare the three groups' means on attitudes toward drug use and self-reported use.

The design looks like this:

X_1	O
X_2	O
C	O
Prevention Services/ Control	Posttest

Alternatively, the coordinator could have strengthened her design by comparing the three classes before as well as after the prevention programs were offered. This design would look like this:

O	X_1	O
O	X_2	O
O	C	O
Pretest	Prevention Services/ Control	Posttest

This design is much the same as the earlier experimental design, but without random assignment to ensure that the same kinds of students were spread equally across all three classes.

Perhaps you do not have access to schools or students not served by your prevention program. You can still use a quasi-experimental comparison group design. You may be able to compare results from your prevention project with results from the national survey of high school seniors conducted by Dr. Lloyd Johnston and his colleagues at the University of Michigan. Annual results of this survey are available by contacting NIDA. The NIDA reports provide national and regional estimates of the incidence and prevalence of a range of drug-related attitudes and behaviors for a representative sample of high school seniors, which can be used for comparison purposes. For example, you may seek to reduce regular marijuana use among high school students through a student assistance program. By comparing the rates of daily marijuana use in your school with the rates reported in the annual surveys of seniors, you would be using a quasi-experimental comparison group design.

The variety of quasi-experimental comparison group designs is unlimited. Observations (Os) and prevention strategies (Xs) can be added or subtracted in comparison group designs in any combination of measurements you care to create. Just remember, the more observations and prevention strategies you have in your design, the more complicated your evaluation project will be.

Time-Series Designs. Although it is always preferable to have a comparison or control group, you may find that impossible. In this case, a time-series design can be considered. A time-series design is more powerful than a pretest-posttest design, since it allows you to observe trends in behavior or attitudes before and after your program. A major limitation of a time-series design is the practicality of testing your group several times before you begin your program. A time-series design is diagramed here:

O	O	O	X	O	O	O
Pretests			Prevention Service	Posttests		

Posttest-Only Designs

If you want some measure of the effectiveness of your program but don't have enough participants, the power to construct comparison and control groups, or the opportunity to give pretests, you can gain some information through a posttest-only design. In posttest-only designs, you simply measure the outcomes of your program.

A posttest-only design might be considered if you see individuals or groups only once and are not able to administer both a pretest and a posttest. For example, in a collaborative project with NBC affiliate KING 5 Broadcasting Company in Seattle, a posttest-only design was used to evaluate a statewide, single evening parent prevention training workshop. This evening workshop was scheduled 2 days after a TV docudrama highlighting the experiences of a family with a teenage drug abuser. Parents who showed up for the workshops (more than 4,000 on the same evening) were recruited through TV public service spots, the docudrama, and newspaper articles. These were not people who expected to be given a pretest when they showed up at a

parenting workshop on teenage drug abuse prevention. Therefore, the evaluation used a single-page posttest for participants and a followup phone call to the people who coordinated and led the workshop sessions. This posttest-only design is diagramed here:

X	O
Prevention Service	Posttest

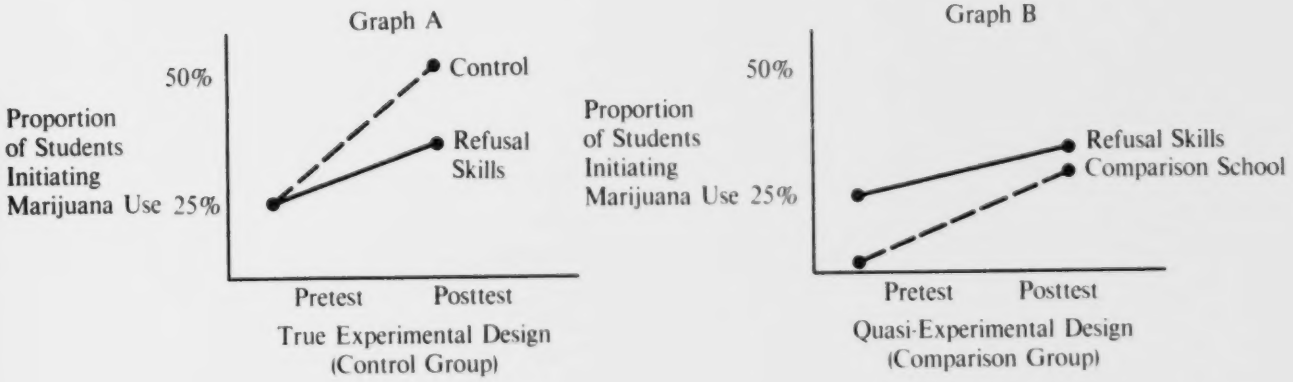
Posttest-only designs are the weakest of the designs discussed. They can, however, provide information that will improve your program in a number of areas, including targeting, marketing, recruitment, implementation, and content. While they do not allow you to compare your program's outcomes with any other groups or standards or with a pretest, they can be used to measure drug use intentions and drug use rates after a prevention initiative.

Comparing Outcomes from Different Designs

How these designs differ in what they can tell you about your program's effects may be more easily understood by comparing graphic displays of the outcomes from four of the designs discussed. Look at graphs A, B, C, and D in figure 5.

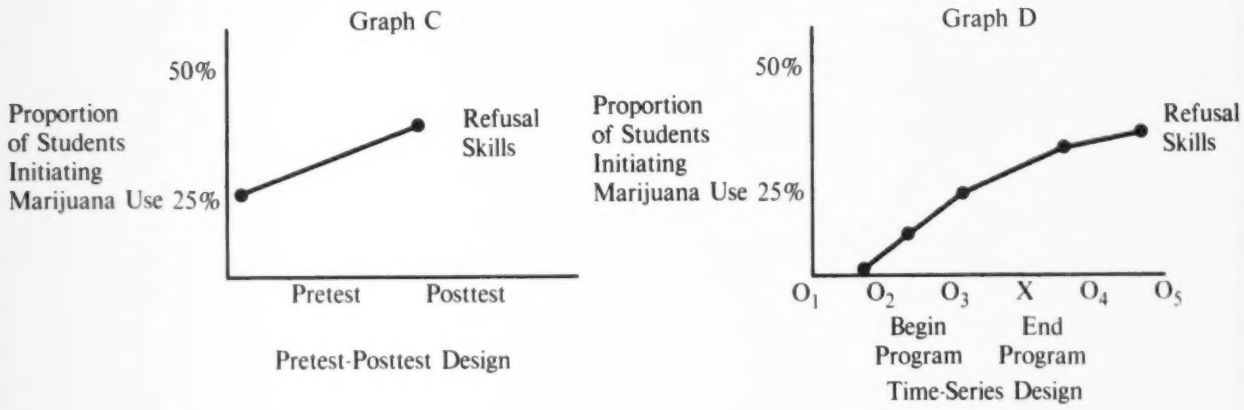
These four graphs illustrate the results of a program to prevent adolescent drug use by teaching parents and teachers how to teach children refusal skills. The outcome is the proportion in each group initiating marijuana use by the end of eighth grade after the seventh grade school and family prevention program.

Figure 5.—Outcomes of a School and Family Training Program in Refusal Skills



Graph A shows the results of a true experimental design. Using this design, students were randomly assigned to classrooms with the program and classrooms without refusal skills training. Note that at the beginning of the seventh grade (pretest), roughly 25 percent of the students in both the refusal skills training group and the control group had already initiated marijuana use. By the end of the eighth grade, the proportion of students who received refusal skills training and had used mari-

Figure 5.—(Continued)



juana had risen to about 35 percent, while the marijuana initiation rate had increased among their nontrained control peers in the same school to about 51 percent. Prevention researchers would call this a 16-percent reduction in marijuana initiation as a result of refusal skills training. Because students were randomly assigned to classrooms and had similar rates of marijuana initiation at pretest, prevention workers could be confident that this difference was brought about by the refusal skills training program.

Graph B shows the results of a study using a quasi-experimental design. In this study, all the seventh grade students in one school received the refusal skills program, while seventh grade students from a different school without the refusal skills program were used for comparison purposes. As graph B shows, at the beginning of the program, more students in the school that planned to offer refusal skills training had initiated marijuana use (about 25 percent of the entering seventh grade students). This would seem to be a school in need of prevention services. In the comparison school, only about 5 percent of the entering seventh graders had used marijuana. As graph B shows, the proportion of students initiating marijuana use over the period of evaluation was greater for the school with no refusal skills program than for the school with the program. It looks good. There was a lower rate of increase in marijuana experimentation in the prevention group after refusal skills training. What can't be determined from graph B is what caused this difference in rates of marijuana experimentation in the two schools. It could be the refusal skills training. On the other hand, it could be due to the differences in rates of smoking marijuana in the two schools at the beginning of seventh grade. Perhaps the students in the comparison school just caught up by the end of the eighth grade. The students who got prevention services may have just started smoking earlier. While the results look favorable, these prevention workers can't be sure that their prevention program caused the differences in observed rates of increase in marijuana smoking.

Graph C shows the results of a pretest-posttest design with no comparison group. Here, the refusal skills training was offered to seventh grade students in one school, but no comparison group was studied. Graph C shows that the proportion of marijuana initiators increased in the refusal skills school after the program from 25 percent to about 35 percent. This is the same rate of increase found in the previous examples. Was the program a success or a failure? The rate could not decrease. Should the prevention workers be pleased with a 10-percent increase in marijuana initiation? In the absence of some comparison, it is hard to know whether to be pleased or discouraged by these results

Graph D shows the results of a time-series design. In this example, students were surveyed in fifth, sixth, and seventh grades before the refusal skills training program and again in eighth and ninth grades after the program. No comparison or control group of unserved students was studied. Using this design, we see that the rate of increase in marijuana initiation declined after students were exposed to the refusal skills training program. This decrease in the rate of marijuana initiation is desirable. The time-series design shows that the rate was increasing faster before students received the training. This design gives greater confidence than the pretest-posttest design in graph C that the refusal skills training program did have an effect on marijuana initiation. However, a concern still remains. What if marijuana experimentation naturally peaks among students in this community before seventh grade? If this is a plausible suggestion, natural maturation rather than the refusal skills program may be responsible for the observed results. When using time-series and other quasi-experimental designs, it is important to consider other possible explanations for the results observed and to decide how plausible they are. The more such explanations can be shown to be unlikely, the greater confidence prevention workers can have that their prevention program was responsible for the observed results.

The design you choose can be a powerful determiner of how complete the answer is to your question. The closer you are able to approximate a true experimental design, the more information you will have to answer your question.

For a more detailed discussion of designs, consult Campbell and Stanley's *Experimental and Quasi-Experimental Designs for Research* (1963) or similar publications.

Part 2: Choose the Design That Fits Your Question and Situation

Considering the designs discussed, which one do you think will best answer the question you're asking?

_____

_____

_____

_____

Diagram that design in the space below, labeling the assignment process, the pretest, the posttest, and the prevention service.

Part 3:
Define Your Sample

You now have a question about your program, and you know what design will best answer that question. How will you select the people you will serve and study?

The people you study should be similar to the population you serve. If you are doing refusal skills training with sixth grade students in three schools, you should have a good representation of sixth grade students from the three schools in your study.

If you are providing community workshops in setting family rules on drugs in a metropolitan area, you will want to include in your study a broad cross section of parents from a good portion of the places where you provide the workshops. Such a sample will allow you to learn how well parents are able to actually set and maintain rules about drugs in their families after the workshops.

One way to ensure that the people you study resemble the people you serve is to study all the people you serve. In short, study the whole population served. This is called a population study. If the number of people served by your prevention program is relatively small, say for example 90 children of alcoholics in support and skills training groups in three schools, you may want to include everyone in your evaluation.

Many prevention programs cannot afford to study all the people they serve. People who provide prevention curriculums to schools at every grade level may be reaching 30,000 children each year. When large numbers of people are served, it saves money and time to study only a portion of the population served. This is called a sample.

Sampling

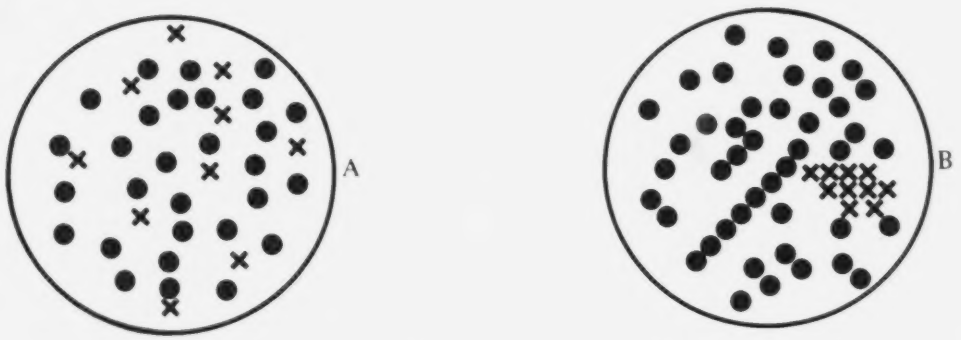
How do you decide whether to study the whole population or just a sample? Three considerations should go into making this decision:

1. To compare groups after a prevention program, you should have a minimum of 30 people from each group.
2. Consider the upper limit of your population. If you serve 100 people or fewer in the program you want to evaluate, study them all.
3. Consider the cost and ease of studying all those served as opposed to a sample, given your program and design. (For example, when surveying students in schools, it is sometimes simpler to survey all students in a set of classrooms than to pull out a sample of students for surveying.)

If you are still not sure whether to study the whole population or a sample, consult with one of the resources discussed in chapter 2. Usually a sampling expert can be contacted at the local university, at the local TV station, or at a company that conducts surveys for businesses.

If you have decided to sample, how do you ensure that the sample you pick is similar to the people you serve? Look at Figure 6. Circle A and Circle B each show a sample selected from a population. Which sample do you think best represents the population? Circle A. How do you get such a sample? By picking it at random, by random sampling. Drawing people's names by chance from a hat is one example of random sampling. Random sampling sounds like something for experts, but actually it is very simple to do.

Figure 6.—Random and Non Random Samples from Populations.



• = population of interest x = sample

Unveiling the Mysteries of Random Selection

Obtaining a random sample of participants is practical, easy, and inexpensive. If you have decided that a random sample is necessary for your study, here's how you do it.

1. Make a list of all the people or units (classrooms, PTAs, etc.) you serve. This is your general population of interest. Give each of those people or units a number, so that you have a numbered list.

2. If you are sampling from a list, use a table of random numbers for the sheer ease it offers. Turn to Appendix C and find the table of random numbers. Close your eyes and point your finger at the table. If the number your finger touches matches the number you've given to one of your program participants or units, that person is part of your sample. Then start down the list of random numbers. Each time you come to a number that matches a number on your list, assign that person to your sample. Continue this process until you have reached your desired sample size. You now have created a random sample from a random starting point. *Or*. . .

3. If you are sampling from people just entering a program rather than from a list, sample every "nth" person (5th person, 10th person, whatever number you choose) until you have your desired sample size. For example, to create a sample of 50 from a population of 500, you would sample every 10th person.

Deciding Size of Your Sample

Determining the appropriate number to sample can be a complicated procedure. As mentioned earlier, a rough rule of thumb is that you should try to have a minimum of 30 in each of your participant and comparison groups. Nothing is magical about that number, however. The larger the samples you use to make comparisons, the less the chance that the results you find occurred just by chance, and the easier it is for you to demonstrate that the differences your program generated were statistically significant. (This simply means that they were not very likely to be the result of chance alone.)

The sample size table in Appendix C shows you the size of two samples you would need in order to find a significant outcome if you were comparing proportions across two groups. For example, if you studied student self-reports of alcohol use during the month after participation in a refusal skills class and discovered that 70 percent of your prevention group had abstained from alcohol use, while only 40 percent of the control group had abstained from alcohol use, Appendix C shows you would need sample sizes of 45 in each group to be sure that this difference of 30 percent between groups would not occur by chance more than 5 percent of the time. Ninety-five percent of the time you could be confident that the 30-percent difference you found in your sample reflected some real differences between the whole prevention and control groups from which you sampled. (This is the famous 95-percent significance level!)

Losing Part of Your Sample (Attrition)

Sometimes you will choose a certain number of people or units for study and then discover that you cannot find or collect information from some of them. People may move away, may refuse to complete your questionnaire, or may be absent from school or work on the day you're doing your study. Losing people or units from your study can affect the results. For example, research has shown that rates of drug use are higher among people who move a lot than among people who do not. Similarly, students who are absent from school on any given day are more likely to use drugs than students who aren't. You can do two things to be sure that your study isn't compromised by loss of the sample. First, select a 15- to 20-percent larger sample for your study than you will ultimately need. If people are lost, the sample will still be sufficiently large. Second, take precautions not to lose those people you have sampled for your study.

STAFF/TEAM AGENDA 2

ATTENDING: For a small program, the whole staff. For a larger program, representatives who have an interest, some expertise, or a critical role in the success of an evaluation. If someone has identified an evaluation resource, e.g., a student of research designs or evaluations, you may want to invite that person to assist you with questions of evaluation design.

TIME: Schedule 2 hours.

OBJECTIVE: To choose an evaluation design after comparing pre-post, experimental, quasi-experimental, and post-test only designs with your program questions and resources.

I. Discuss the possibility of control or comparison groups. (Use chapter 4 as a reference. It would be a good plan to have key people read chapter 4 before the meeting.)

II. Consider control, comparison, pretest, posttest, and time-series designs.

III. Choose an appropriate design.

IV. Ask your planning staff to read chapter 5 before your next meeting.

Chapter 5

Outcome Measurement

Part 1: Measuring the Results of Your Program

Step 3: Designing Measurement Instruments

Drug abuse prevention aims to produce two broad categories of effects: immediate results and longer term outcomes. Reduction in drug use or abuse is, by definition, the ultimate goal of prevention programs. Measures of drug use provide information on the long-term outcome of ultimate interest for prevention.

For that reason, it makes sense to try to measure changes in participants' intentions toward and actual use of alcohol and/or other drugs whenever possible. In prevention activities, however, immediate results such as changes in attitudes towards drugs also may be important to measure. Prevention programs focus on changing behavior at a future point in time, and this distance from the time of program involvement can sometimes preclude measurement of actual substance abuse outcomes for a considerable period. (For example, behavior change resulting from a drug education program in elementary school may not be measurable for several years, but intentions regarding future drug use can be measured as an immediate result of such a program.)

Measures of Outcome

Different prevention programs may seek different prevention goals. A program targeting fifth and sixth grade students may seek to prevent or, at minimum, delay the age of first experimentation with tobacco, alcohol, and/or marijuana. Alternatively, prevention efforts on a college campus may seek to reduce the regular use of tobacco or alcohol. A prevention program in the workplace may seek to target alcohol or other drug abuse among employees. In deciding what drug use measures to use in assessing your program's long-term outcomes, be clear on what level and type of drug-using behavior you seek to prevent and use or construct measures of that behavior. Appendix B contains examples of items measuring a range of drug-using behaviors that you may choose to use. An advantage of using items selected from Appendix B is that these items have been used successfully in previous studies. We know that they work. Further, for the items in Appendix B, national averages or "norms" have been established. If you use these items, you can compare the results of your prevention work with national norms.

Sometimes, the effect of your prevention program on actual drug use may not be visible for a long time. As noted above, a drug abuse prevention curriculum offered in primary school may not affect actual use of drugs like tobacco, alcohol, or marijuana for several years. In such instances, other measures related to drug use may be used to assess immediate results. These include:

1. Intentions to use drugs. Do people served by your program expect to use drugs in the future? An example question might be: "Do you think you'll drink alcohol when you're an adult?"

2. Attitudes toward the use of drugs. Do people served by your program approve or disapprove of the use of drugs? An example item is: "Do you think it is okay for someone your age to smoke marijuana?"

3. Perceptions of risks associated with the use of drugs. Do people served by your program understand the health risks or negative social or other consequences associated with drug use? An example question is: "Do you think it hurts people if they smoke marijuana regularly?"

By measuring intentions, attitudes, and perceived risks of drug use, you can learn whether participation in your program was associated with immediate positive changes in variables that have been

shown to be related to drug use itself. You can assess your program's effectiveness in changing intentions, attitudes, and perceptions without waiting to measure actual drug use.

Drug use itself can be measured in at least four different ways: (1) by the self-reports of people you are studying; (2) by using biochemical assay procedures on samples of saliva, urine, or blood provided by people you are studying; (3) through parent reports, police reports, school records, or other institutional records; and (4) by direct observation.

Of these four measures, the most frequently used in prevention research are self-reports and reports of others. Although one might think that self-report of a potentially incriminating activity as drug use might be of questionable validity, studies have shown that self-report data provide reliable and valid estimates of drug-related behavior (Marlatt et al. 1986; Elliot and Huizinga 1984).

The validity of self-reported drug use can be increased by using biochemical assay procedures (Pehacek et al. 1979; Luepker et al. 1981). Although both self-reports and biochemical assays are used by researchers in the treatment and prevention fields, biochemical techniques may be beyond the capacity of most prevention programs committed to self-evaluation. Observations, though valuable as an outcome measure for high-frequency behaviors, are difficult to obtain for hidden behaviors such as illicit drug or alcohol use. Self-report and record data are often adequate to provide information on drug use.

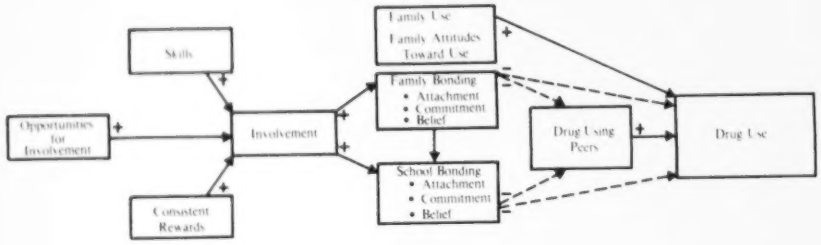
Measuring Immediate Results

Although prevention programs ultimately seek to affect drug use outcomes, sometimes the immediate results being sought are in other areas. Look back at the model of your program that you drew in chapter 3. What immediate results did you specify for your prevention program in that model? Perhaps you hope to improve parents' family management skills or to increase childrens' knowledge of the social or health risks associated with the use of drugs. It is important to measure your success in achieving this immediate result for two reasons. First, information on the immediate results of your program provides early evidence of effectiveness, even in the absence of information on long-term drug outcomes. Second, if you have not produced the immediate results you seek, you may have little reason to expect that long-term drug outcomes will be affected. Measuring immediate results allows you to know whether the program needs to be altered or improved before you conduct a longer term study of drug use effects.

Let's look at an example of a program model and how measures of immediate results and drug use outcomes can be gleaned from the model. The social development model of adolescent drug use (figure 7) is used in the authors' prevention work. Prevention programs based on that model seek to increase young people's opportunities for prosocial involvement, their skills for success in those involvements, and the rewards they receive for positive participation with family, school, and peers. Parental drug use is also addressed along with parents' attitudes toward their children's use of drugs. Prevention activities based on that model include working with teachers to improve instructional skills and classroom management, working with families to clarify family rules about drugs and ensure contributing roles in the family for all members, and providing opportunities for positive peer interaction and influence in school classrooms. This work is expected to yield a number of immediate results—namely, strengthened social bonds to family and school, increased attachment of children to their parents and teachers, increased commitment to their families and to educational pursuits, and strengthened belief in the moral order. This last result is expected to inhibit violations of that order, such as the illegal use of drugs by adolescents.

Figure 7.—Social Development Model of Adolescent Drug Use

Socioeconomic Status
Sex
Ethnicity



Evaluating this work involves measuring the following immediate results of these programs:

- Increased social skills
- Perceived rewards for interaction with prosocial children and adults
- Perceived rewards for involvement in legal activities
- Attachment to teachers, parents and peers
- Commitment to school
- Belief in the moral order

As you look at your own program model, identify the elements that you expect to change immediately as a result of your prevention work. List these. These are the immediate results you should seek to measure in your self-evaluation.

Many instruments for measuring the effects of drug prevention programs have already been developed and tested, and adopting or adapting an existing measure is suggested whenever possible. Such an instrument will have proven reliability and validity and can reduce some of the error in your findings. You can also borrow items or groups of items from different instruments to build an instrument that addresses the questions you want answered. An instrument you might consider adopting or adapting for your evaluation study is included in Appendix B of this handbook.

Whether you use a previously tested measure or your own instrument, you should always field-test it before beginning the formal collection of data to make sure that it will meet the needs of your study. For example, you would most likely need to simplify or modify an instrument designed for high school students, before administering it to fifth graders.

To field-test an instrument, ask people with characteristics similar to the group you plan to study to complete it. For example, if you are developing a questionnaire for students, you may want to ask children of friends to fill out your draft questionnaire. Once they have completed it, review the questionnaire with them. Ask if any questions were unclear or confusing. Be sure that they understood the possible responses. Also keep track of how long it took to complete the questionnaire, so you can know if it is too long to be given in the time allowed. Ask if the field test respondents became fatigued or bored while completing the questionnaire. Based on this field test, you can revise the questionnaire to fit the study sample. The more field testing you do, the better your final instrument will be.

Operationalize Your Question

The effectiveness question you developed in chapter 3 will guide you in choosing what to measure and how to measure it.

Write your question once again.

*** THE QUESTION ***

****
*
*
*
*
****

What kinds of behavior is your question asking about? How will you recognize your outcomes when you see them?

Consider, for example, this question raised about a parent training program: "Does parent training in setting rules and consequences for drug use increase childrens' perceptions of risks associated with drug use and in this way delay drug initiation?"

The two outcome measures of interest in this question are an immediate result, "perceptions of risks," and a longer term outcome, "childrens' initiation of drug use." How would you measure these two variables?

The first step is to operationalize the variable. In other words, define the variables so you know what constitutes "perception of risk" and what is meant by "initiation of drug use."

- *Perception of risk* could be defined as a child's report that there would be clear and explicit negative family consequences if he or she experiments with drugs. This could be measured using student survey items.

- Likewise, *childrens' initiation of drug use* could be defined as any experimentation with alcohol/drugs and could be reported by self-report survey questions.

If the outcomes of the parent training question were operationalized, the question might read like this: "Does parent training in setting rules and consequences for drug use increase perceptions of

risks, as measured by children's self-reports of perceived risks of drug use, and delay children's initiation of use of alcohol and other drugs, as reported by self-report data on drug use."

As you operationalize your outcome variables related to drug use, refer back to the first pages of this chapter. Do you expect your prevention work to reduce problems associated with any drug use, regular drug use, or to prevent drug initiation, or the use of a specific drug? For each relevant outcome, select or design an appropriate measure. If you seek to prevent problems associated with drug use, you will need to measure both the frequency and duration of use and assess, for each person in your sample, whether evidence of impairment in functioning related to drug use is apparent. If you seek to prevent regular use of drugs, at a minimum you will need to measure, for each drug of concern, the number of times the drug was used or the frequency of use over a specified period. Most prevention researchers ask about the frequency of use in a 30-day or 1-month period. You may also want to measure the quantity or amount used for certain drugs, such as alcohol. If you seek to prevent drug initiation, you will need to ask whether each person in your sample has ever tried each of the drugs of concern in your study. All these measures can be designed to focus on the initiation and use of any specific drug of concern.

Now, operationalize your question so you will know what specific attitudes, behaviors or characteristics you are going to measure as outcomes of your evaluation. (You may write in the handbook or use the evaluation think sheet in Appendix A.)

Write "THE QUESTION" here: _____

_____

_____

_____

List the *long-term outcome* variables in your question		List specific measures of the variables
_____	=	_____
_____	=	_____
_____	=	_____

List the *immediate results* in your question		List specific measures of the immediate results
_____	=	_____
_____	=	_____
_____	=	_____

Rewrite your question with the immediate and longer term outcome variables operationalized:

_____

_____

_____

_____

_____

Once you have operationalized the variables, you will need to collect data in order to answer your questions regarding immediate results and long-term outcomes. Consult the data collection instrument in Appendix B. Look for items that measure the variables that you need to measure, and use or adapt those items. If you cannot find items that measure the variables of interest to you, you can consult with a resource person about existing items that may measure what you want or develop your own items.

Staff/team agenda 3 is included at the end of this chapter to help you and your staff/team collaboratively plan how to measure the outcomes of your program.

Part 2: Deciding on Background Data

When you know what outcomes your study will be assessing, you're ready to decide what other information you need about the subjects of the study. What are the characteristics of your sample? Some background characteristics commonly measured include: age, sex, race, presenting problems (substance use history if any), socioeconomic status, cultural background, family composition, and family history of alcohol or drug use. The background information you collect for your study will depend on the characteristics of your sample and the evaluation questions you are asking.

List the background information you will need to be able to talk about "who" the people were who participated in your study. What characteristics of these people do you think will be important given the questions you ask? You will want to list both the background information you need to collect and the reason you think it is important.

Background Information Item	Reason for Collecting It

As you begin a STEPP evaluation, your enthusiasm may encourage you to try to collect all kinds of information rather than only the data you need to answer your question. All information is interesting, but only some of it is essential for you to answer your evaluation question. Just collect the background data you need! Keep it simple, from the design through the data analysis, and you will have both usable data and a staff that will look forward to the next evaluation process, curious to learn more.

STAFF/TEAM AGENDA 3

OUTCOME MEASUREMENT

ATTENDING: Staff members who have a particular interest in or understanding of program outcomes, including program or clerical staff who will followup with participants after prevention programs.

TIME: Schedule 2 hours. (If you decide to design your own instruments, you may need to delegate tasks and return again. You may want to seriously consider customizing the pretested instrument that you will find in Appendix B of this handbook.)

OBJECTIVE: To consider alternative instruments for outcome measurement and choose ones that are appropriate for the questions you are evaluating. If instruments are not available to serve your needs, to design an instrument that will fit your evaluation questions.

I. **Review the instrument that is presented in Appendix B.** Remember, this instrument may be modified to fit your program's needs. Gather other instruments which may measure variables you think are important. In considering instruments, you must be as sensitive to the ease of administration as to the usefulness of the data. (Chapter 5 discusses choice of measures and creation of your own measures.)

II. **Choose a measure or measures that will answer each of your effectiveness questions.** If you design an instrument, keep in mind a format that will allow for easy transfer of the information to a computer or data sheets for data analysis.

III. **Devise a plan to field-test your instruments for suitability for your population.**

Chapter 6

Implementation (Effort) Measurement

Implementation or effort measurement answers the question "What actually happened in the prevention program?" Implementation or effort measures tell you about: (1) level of effort, (2) level of participation, and (3) quality of program delivery.

Effort measures can tell you how many parent classes were offered, how many lessons were taught by teachers using the prevention curriculum, how many times staff made presentations to community groups, how many parents actually attended parenting classes, or how many phone calls were received on an alcohol abuse prevention hotline.

Effort measures also can provide information on how closely the actual program followed the initial design. If teachers promised to teach three alcohol prevention lessons a month, how many were actually taught? Did teachers actually use the interactive problem-solving strategies they were taught? How many of the parents in the parenting classes applied the skills they were taught when they got home? What actually happens when someone from the student assistance program counsels a peer about drug abuse?

Not all effectiveness questions require that you ask implementation questions to arrive at an answer. If you are asking an effectiveness question, such as "Did our seventh grade refusal skills curriculum reduce the self-reported use of alcohol among students in the prevention class?," it is possible to achieve the answer without ever asking "Did teachers actually use the curriculum as we taught them to?" "How many classes did each teacher teach?" or "Did the teachers use direct instruction or group process strategies?" These questions look inside the program and tell exactly what was done to attain results.

If you do not measure the effort that was undertaken to bring about the desired outcomes, however, your program will remain a "black box" in your evaluation. If your program fails to achieve the desired drug use reduction outcomes, you will be unable to tell whether that was because the program was not well implemented or because the program, though well implemented, didn't work to prevent drug abuse as expected. Alternatively, if your program succeeds in preventing drug use, you will not know what it was in your program that produced these effects.

For example, the Quinn County Prevention Coalition asked a local school district to collaborate in evaluating the intermediate (grades 3-5) component of its drug abuse prevention curriculum. Two schools of equal size with similar student characteristics were chosen to be the experimental and control schools for the evaluation.

All teachers at the experimental school were given copies of the drug abuse prevention curriculum and asked to teach 12 of the prevention lessons for their grade level in the first 3 months of the school year. Teachers at the control school were asked to follow their normal teaching patterns. All third to fifth grade students at both schools were given a survey about attitudes toward drug use at the beginning of the project and at the end of the 3-month training period.

When the data from the pretests and posttests were analyzed, it was found that:

1. There were no significant differences between third grade students at the experimental and control schools on attitudes toward drug use.

2. Fourth grade students in the experimental school had more negative attitudes toward drug use than fourth graders at the control school, but the outcomes were only marginally significant.

3. Fifth graders who had been exposed to the drug abuse prevention curriculum had attitudes that were significantly healthier than both drug use attitudes of their fifth grade control group peers and the drug use attitudes of the third and fourth grade experimental students in their school.

How could one curriculum produce such mixed results at three different grade levels? One obvious possibility is that fifth grade teachers actually used the curriculum more than third and fourth grade teachers in the same school.

Without measures of implementation (i.e., information on the number and type of lessons actually taught by third, fourth, and fifth grade teachers, observations of teaching strategies used by both control and experimental teachers, and knowledge of drug-related events at the two schools during the 3-month test period), it would be almost impossible to explain why the results differed at each grade level.

Implementation measurement also allows you to assess differential effects of your prevention program. For example, implementation measures of a parenting program will allow you to answer these questions: Is the program more effective with parents who attend all sessions than with parents who attend only a portion of the sessions? Is the program more effective for families with younger children or families with older children?

"Critical mass" may be a factor in the success of prevention activities. What we do to prevent substance abuse may be a less powerful factor than "how much" we do of it. Without measures of implementation, we can't determine how much is enough to get results.

It is true that measuring "what we do" often results in more paperwork for your program staff. However, implementation measures already exist in programs that have a management information system in place. Whether or not you're involved in evaluation of your program, you may need implementation information to know what services your prevention program is actually delivering. Although program staff may initially question the value of turning in monitoring forms showing how they've used their time, this monitoring of effort actually documents their value to the program.

Part 3: Consider Instruments for Measuring Implementation

Most projects either use existing information sources to measure implementation or design their own instruments for this purpose. The first step in designing your implementation instrument is to decide what questions you want to answer with your monitoring system. Here are some implementation questions that previous evaluations have addressed:

1. How many days a week did each teacher use cooperative groups in teaching the refusal skills curriculum?

2. What other drug abuse programs were operating in the school/community, concurrent with our prevention curriculum?

3. Who (by categories) attended our community drug awareness presentations?

4. From what social groups were our 10th grade student peer counselors drawn?

It is important to have a use for any category of information you choose to collect. (Don't forget: Keep it simple!) If specific uses are communicated to your staff, you are more likely to attain full participation in your monitoring program. Listed next are the uses of the data to be collected in questions 1-4.

1. Since cooperative classroom structures have been shown to expand friendships and provide increased academic success, teachers' use of cooperative techniques may lead to both positive peer attachments and increased commitment to school, factors that could decrease the chance of a young person's experimenting with alcohol and drugs.

2. One possible explanation of surprising results might be the presence of other programs that were affecting either prevention or comparison groups.

3. If you know the types of people attending community drug awareness presentations, you can tailor presentations to their needs. You will also know which target populations you're missing.

4. When you look at the impact of your peer counseling program, you will want to ask why some students report that peer counseling positively affects their drug use and others report no difference. It may be that the individuals not affected by the program were from groups not chosen to be peer counselors.

Measures of Time Used

Use of time is one of the most common implementation measures. Measures of time should be categorized into standard intervals with some way to distinguish among different types of staff activities. The time intervals to be used to record activities of your staff or team must be decided. Time intervals small enough to pick up different activities, but not so small that they become a paperwork burden, are required. Categories of activities to be monitored also must be chosen. Examples of three measures are shown in figures 8 and 9.

People frequently fail to make a logical linkage between the question to be answered and the measures used. However, if you follow the strategy demonstrated, of first specifying the questions you want your instrument to answer and then listing why you need the information, you should know what measures to use from your existing management information system or be able to design an instrument that will give you the accurate and useful implementation information that you need.

Other questions you may want to discuss in designing instruments to measure implementation include:

- Do our needs require a staff-activity or a client-centered approach?
- When and how frequently will data be collected? Do we want to record information every day or sample units of time for measurement?
- How valid and reliable is the information likely to be?
- How will information be fed back to the staff who have collected it?

These questions as well as the ones discussed earlier in this chapter demand consideration by all who will be involved in data collection. Staff/team involvement in the design of implementation measures should help ensure their use.

Staff/team agenda 4 is included at the end of this chapter to help you in collaborative planning for measuring your program's efforts.

Figure 8.—Instrument to Measure Program Effort

MEASURING PROGRAM EFFORT

Staff Name _____ *Week of* _____

Organization Contacted/ served	*Prevention Activity*	*Planning Time*	*Service Time*	*Number Served*	*Notes and Explanations*

PREVENTION ACTIVITY CODES:

1. Peer Counseling
2. Teacher Training
3. Parenting Training
4. School Advocacy
5. Other

TIME CODES:

1 = 15 minutes or less
2 = 15-30 minutes
3 = 30-45 minutes
4 = 45 minutes to one hour, etc.

Source: Austin, Michael J. et. al. *Evaluating Your Agency's Programs* Copyright 1982 by Sage Publications, Inc. Reprinted by permission of Sage Publications, Inc.

Figure 9.—Instruments to Measure Staff Activity

PREVENTION SERVICES
STAFF ACTIVITY FORM

Staff Name _____ Week of _____

	DIRECT SERVICES			*INDIRECT SERVICES*			*ADVOCACY*	
Organization Contacted	*Planning Time*	*Service Delivery*		*Planning Time*	*Service Delivery*		*Planning Time*	*Activity*
		Time	*# Served*		*Time*	*# Served*		
COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8	COL. 9

PREVENTION SERVICES
GOAL-FOCUSED ACTIVITY FORM

ORGANIZATION CONTACTED	*TYPE OF CONTACT**	*GOAL 1: To increase work opportunities for youth*		*GOAL 2: To increase abilities of community members to cope with stress*		*GOAL 3: Development Activities*
		Time	# Served	Time	# Served	Time

*CONTACT CODE
1 = Direct Service
2 = Provide consultation (indirect services)
3 = Provide training (indirect services)
4 = Receive consultation
5 = Receive training
6 = Advocacy activity
7 = Planning, general information, sharing contact
8 = In-house planning or preparation

Source: Austin, Michael J. et. al. *Evaluating Your Agency's Programs* Copyright 1982 by Sage Publications, Inc. Reprinted by permission of Sage Publications, Inc.

Designing Implementation Instruments

Implementation Questions I Need to Answer

1. _____
2. _____
3. _____
4. _____
5. _____

How Will I Use This Information?

1. _____
2. _____
3. _____
4. _____

Who Should Be Involved in the Design?

_____ _____

_____ _____

First Draft of My Form

STAFF/TEAM AGENDA 4
IMPLEMENTATION MEASUREMENT

ATTENDING: Supervisory Staff and Representative Service Providers.

TIME: Schedule 2 hours.

OBJECTIVE: To consider alternative instruments for measuring effort, by reviewing existing instruments and considering the costs and benefits of creating your own instruments.

I. **Review available instruments** as well as forms that are currently in use within your organization that measure program effort. Consider the time and energy costs of the staff members who will be responsible for this data collection.

II. **Choose or design instruments** to measure your effort questions.

III. **Devise a plan to test the validity, reliability, and practicality of your instruments** for your program.

Chapter 7

Organizing and Collecting Data

Step 4: Building a Data Collection Plan

Part 1: Plan How to Collect Data

In chapter 5, you operationalized your evaluation question so you know what information you need to collect. The next step is to build the plan that shows how this work is going to get done.

As discussed in chapter 5, three primary sources of outcome information are available: self-report data, records or archival data, and observational data. The questions you ask will determine which sources you choose to tap. A brief description of the strengths and limitations of each data type is included here.

Self-Report Data

Self-report data can provide information on attitudes, beliefs, behavior, and attributes. It can use either an open-ended question format:

"How much did you like this class?"

_____

_____

or a closed-ended question format:

"How useful was the presentation on family bonding?"

Useful 1 2 3 4 5 Not at all useful

An open-ended format will probably give you more information but will be much more difficult to summarize. Closed-ended questions are easy to analyze. For example, by calculating the mean score on the above scale, you can obtain a summary indication of participants' views. Open-ended questions will help you interpret your findings. You may want to use both kinds of questions.

Interviews. Interviews involve an interviewer's asking someone questions, creating an interactive situation that is particularly advantageous if you're concerned about a subject's ability to read or write. Interviews also allow you to stimulate a response or to extend a particular line of questioning. Interviews may be unstructured or open-ended, allowing respondents to talk freely about their own experiences, or they may be structured, presenting a fixed schedule of questions to be answered, sometimes using fixed response choices. Unstructured interviews are useful when you are trying to get a feel for issues or emerging events or experiences. Structured interviews allow responses to be compared and summarized across respondents. With interviews, you can customize your instrument so that not all respondents need respond to all questions. You should expect higher response rates with either face-to-face or telephone interviews than you will achieve with questionnaire data.

Face-to-face interviews will give you a higher response rate than telephone interviews, but the cost of collecting data in face-to-face interviews is high. There is also the risk with face-to-face interviews that the interviewer can bias the information collected. On the other hand, confidentiality and privacy may be more difficult to maintain in phone interviews. The presence of other family members may affect answers on the phone.

Questionnaires. Questionnaires involve the completion of a pencil-and-paper data collection instrument by the subject and are usually the cheapest method of obtaining self-report data. Questionnaires can be administered in person to individuals or groups, or they can be done by mail. The response

rate for in-person questionnaires will be considerably higher than response rates for mailed questionnaires. If you are administering in-person questionnaires to your sample, you can anticipate a completion rate of 85 percent or higher, depending on the population studied. If you administer your survey by mail, a response rate of 70 percent is considered very good. If you have less than a 50 percent response rate, your data may be too incomplete to be usable.

Return rates of mailed questionnaires are subject to selective bias that can affect your findings. Those who liked your program are the most likely to return questionnaires. Also, those with a higher educational background are more likely to take the time to wade through written questions and instructions. Frequently, information is needed from people who are least inclined (or able) to complete a mailed survey form.

A combination of mailed and telephone survey techniques is sometimes used to maximize response rates at the lowest cost. You can do this by sending a survey by mail to all those in your sample. After 2 weeks, you should follow up with a reminder card to those who have not returned the original survey. This procedure should result in responses from 35 percent to 50 percent of your sample. You can then call those who did not respond by mail and ask them to complete the survey by phone. The use of this phone followup should raise your rate of completion to over 60 percent of the sample.

Self-report measures were designed to avoid the problems of data gathered strictly from official records: record data understate the frequency of events and are subject to institutional bias. Self-reports are probably as good a measure of behavior as can be obtained, short of observation. An excellent source for constructing your own self-report instrument is Dillman's *Mail and Telephone Surveys* (1978).

Records or Archival Data

Archival data can be found in your agency or program records, school records, employer records, other agency records, or police and court records. The fact that the information has already been collected makes archival data relatively inexpensive to obtain. Since other people collected the data for other purposes, however, you can never be certain what biases they may contain. If you do approach other organizations for access to record data, you must be very specific in describing what information you need and should plan to work collaboratively with the organization to obtain access in the manner least disruptive and most compatible with the organization's policies and procedures. Gaining access may require several months before the transfer of record data is completed and data are available for analysis. If you hope to use official record data, begin your negotiations long enough in advance to ensure that you will have the information when you need it. If you plan to collect information from schools, see *Gaining and Maintaining School Access for Your Evaluation.*

Gaining and Maintaining School Access for Your Evaluation

If your evaluation project requires that you collect information from students in schools or use student records of achievement, disciplinary actions, or instances of reported drug use, you will need formal permission from your school district to do your evaluation. Many school districts have a formal application procedure that must be followed in order to collect data from or on students. This application requires a detailed program description and a description of your evaluation. It is important to do a good job in completing this application, and you may want to ask a resource to help with it. Draft your application, and then take it to a professor in education or the social sciences you know and ask him or her to edit it or review it for you. Perhaps the husband or wife of a staff/team member can help with this editing.

If you want to maximize the chances that you are able to do a successful evaluation, you may wish to consider the following additional steps in gaining access to your school district.

1. Convince the district decisionmakers of the importance of your prevention program. You may want to present the program to the superintendent of schools and/or the school board. You can increase the chances that they will be able to focus on the importance of your prevention program if you include in this first session a trusted community leader who endorses your program and a member of the superintendent's cabinet who is also convinced of the importance of the prevention work you are doing with the district. Explain simply and clearly to the decisionmaker what you are seeking to do in the school district and why it is important to answer your evaluation question.

2. Another approach is to ask the district to convene an ad hoc committee of representatives of the different groups involved in the district: the school board; central administration; building level personnel including principals, teachers, and representatives of the PTSA; and other groups involved in the district who may be affected by your prevention program. Present your question for evaluation to this group. Tell them that you are interested in understanding the effectiveness of your program in preventing drug abuse among school students. Explain the purpose of your study clearly, and you should find people eager to help you get the information you need without compromising the privacy or rights of any party.

In short, it is important to recognize that the formal research application process may be only part of what you need to do to ensure that you're able to successfully evaluate your program. If it is important to gain access to the schools, it is important to take the time to think through the best way to do it. Once you have gained access, maintain it by reporting information from your project back to your school collaborators in a timely manner and in a way that makes it useful to the school district.

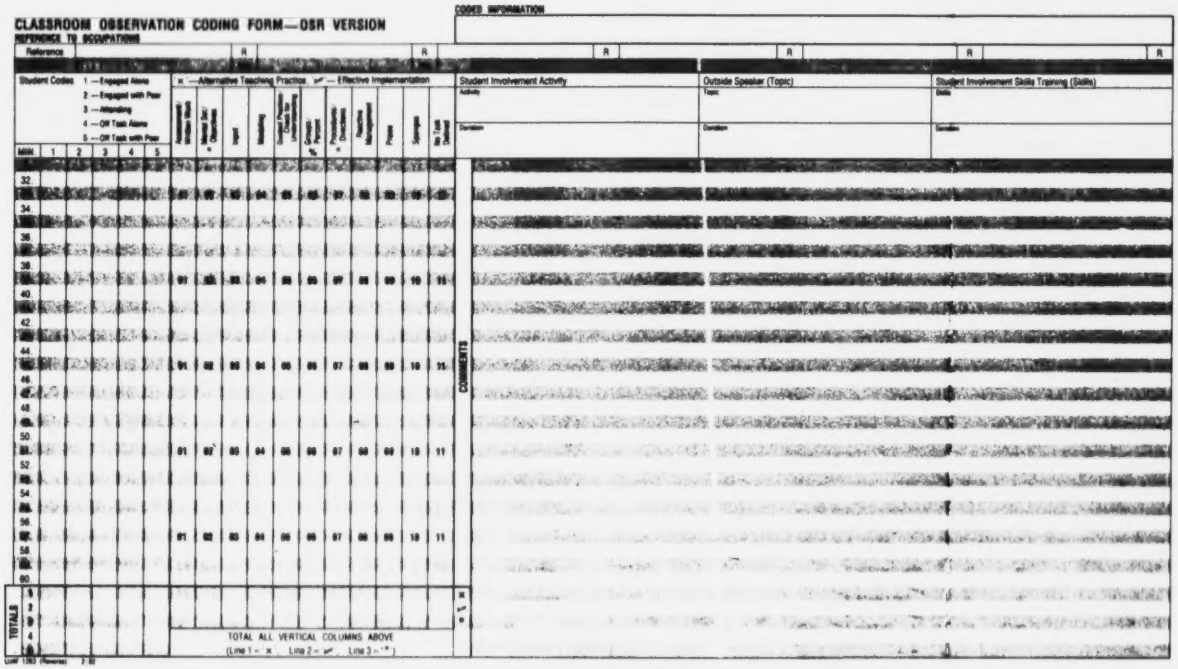
Observational Data

Observational data provide the most valid and most expensive measure of behavior. It is rarely possible to observe people 24 hours a day, however, so it is essential to design observation periods and observational instruments that give a representative sample of human behavior. It is also important to design observational systems that are not intrusive, so the behavior you measure will be as close to natural as possible.

Observational instruments exist for just about any behavior you have an interest in measuring. They can be grouped into three types: checklist instruments, interactional instruments, and naturalistic or open-ended instruments.

Checklist instruments predefine the behaviors that the observer is looking for, and they allow for a quick checking off of behaviors whenever they happen. Checklists usually ask that the observer check a behavior category or categories at regular time intervals, such as every 30 seconds, 1 minute, 5 minutes, etc. Checklists are relatively easy to complete. They are selective instruments that look at a reduced range of human behaviors. If you know what you want to measure, a checklist can be an efficient way of measuring. For example, if you are concerned about student drug use in the restrooms of your school, you might develop a checklist to be used twice each day in monitoring restrooms. The checklist could include categories to note whether any evidence of drug use (i.e., matches or paraphernalia, odor of tobacco or marijuana, groups of students) was found during each monitoring visit. Figure 10 shows an observation checklist used to measure teaching behaviors in school classrooms in a prevention field experiment.

Figure 10.—Classroom Observation Instrument



Interactional instruments measure the dynamic of human interaction. They attempt not only to note the predominant behavior of a timed moment but to record the pattern of interaction — who talked to whom. An interactional instrument is appropriate for certain prevention-relevant tasks. For example, if you want to increase friendship attachments across cliques in a middle school in hopes of changing peer influence networks, you may want to measure interactions among students in classrooms or in a cafeteria. The instrument shown in figure 10 also measures student interactions in the classroom. It is used to see how teacher behavior affects students' classroom behavior.

Unstructured or naturalistic observations provide the most comprehensive representation of behavior. Since they are not limited by predefined categories of behavior, they record whatever the observer notices. The cost of obtaining a "camera view" of life is the difficulty in coding the data for analysis and difficulty in obtaining reliability among observers. The benefit is a participant's view of what is happening. For example, just by keeping an eye on the high school parking lot during the weeks before and after a "steer clear" driving safety campaign in the school, you may be able to observe changes in students' behaviors around and in cars that suggest effects of the "steer clear" campaign. Perhaps you will find fewer beer cans in the parking lot at the end of the day or see fewer students driving their cars recklessly at lunch time.

If you choose to use an observational instrument as part of your evaluation plan, you must build in time to train your observers, in order to obtain consistent and accurate information across observers.

If structured observation is used, categories must be defined so that each observer knows the specific behaviors that should be coded in that category. Also, observers' responses must be compared to build your confidence in the reliability of the data across observers.

Training people to use observational coding systems is time-consuming, but the technology is readily available. You may want to hire a social work or psychology student to help in developing a coding system and training your staff as observers if you decide to collect observational data.

Confidentiality and Consent

The confidentiality of individuals must be maintained in any evaluation. It is important to collect, store, and report information so that no information about particular individuals is released. You will find that taking the time to design instruments that protect people's identity, and establishing procedures that keep individual data from being reported, will ensure a higher response rate from the people in your study. Use numbers rather than names to identify individual subjects.

If you think there is any risk to individuals or of individuals' being identified in your study, you need to obtain a signed, informed consent from the subjects of your study. If you are collecting information from children, you should get their parents' consent as well. Such a consent form should describe the study, the possible risks, the individual's ability to withdraw from the study at any time, and the procedures you use that safeguard individual confidentiality or anonymity. In addition, you need to provide the individual an opportunity to ask questions about your evaluation either in person or by telephone, and ask that they sign a consent form for your records. A sample consent form is included on the next page.

How Often to Collect Outcome Data

Three important points for collecting information related to program effectiveness are: before the

PARENT COPY

University of Washington
SEATTLE SOCIAL DEVELOPMENT PROJECT
Parent Questionnaire
Consent Form

This questionnaire is being sent to parents whose children attend fifth- or sixth-grade classes in Seattle schools participating in the Seattle Social Development Project. The purpose of the Project is to find ways to make school a more positive experience for both parents and children, and to increase students' commitments to educational goals. As part of the Project, we need to learn about parents' opinions and attitudes concerning child rearing. Everyone agrees that raising children is no easy task, but people often disagree on how to do it. Your participation in the survey will help us to learn what parents in Seattle think about those issues. Some of you may remember receiving a similar questionnaire several years ago. The survey is being done again this year in order to see what changes have occurred now that the children are older. For others, this will be the first time you have been asked to complete this questionnaire.

Everything you answer in this questionnaire is *confidential.* Your answers will be put together with those of other parents so that researchers can count the number of times *all* people answered a question a certain way. We would also like to compare parents' opinions with students' opinions. The information will be kept by the Project staff at the University of Washington for the entire time the study is conducted. Your name will never be attached to project results. Access to the information is limited to the staff of the Seattle Social Development Project.

The questionnaire should take approximately 15 minutes to complete. We would like you to answer all of the questions. However, if there is any question that you find objectionable for any reason, just leave it blank. Participation in the survey is entirely voluntary. There will be no penalty or loss of benefits to which you or your son or daughter is otherwise entitled should you decide not to participate. If you agree to participate, please *print* and *sign* your full name below.

WE WOULD LIKE TO SEND YOU $4.00 FOR COMPLETING THE QUESTIONAIRE. Therefore, when you have finished the questionnaire, please make any address corrections on the mailing label found on the copy of the consent form attached to the questionnaire; then return that consent form and the questionnaire to us at the University in the enclosed, prepaid envelope. *When the questionnaire is received, the University will send you your check as soon as possible.* Please keep this copy of the consent form for your own information.

If you have any questions about the survey, please call Marilyn Hoppe at 543-4118.

Thank you.

_____ _____

J. David Hawkins — Date
Director
Seattle Social Development Project

Parent's Statement: I understand that participation is entirely voluntary. I have had an opportunity to ask questions and understand that any future questions I may have about the research or about subjects' rights will be answered by one of the investigators listed above. I consent to participate in this activity.

Please print: _____ _____
First name — Last name

Copies to: Parent
Researcher's file

_____ _____
Parent's Signature — Date

intervention begins (Time One), at the completion of the program (Time Two), and at some designated periods after the intervention is complete (Times Three, Four, etc.). Your evaluation design will determine what the critical data collection points will be. For example, if you are using a time-series design, you will have more data points than if you are using a pretest-posttest design.

For some questions, it is possible to gather Time One data even after the program has begun. If the information you need is contained in records, you can create your Time One data from these records.

You should collect information on immediate results just after participants complete the prevention program. It is tougher to determine when to collect your long-term outcome data. You will need to decide how long after the prevention program to wait if you plan to collect followup information on your program's effectiveness. You need to wait long enough to see the effects, but not so long that they have worn off or have been replaced by other important influences. For example, you might not expect to see effects of refusal skills training with sixth grade children on rates of marijuana experimentation for several months. Yet by eighth grade it is quite possible that the program's effects may have worn off.

Unfortunately, in the drug prevention research area, very little long-term followup research has been done. As a result, it is hard to recommend the "right" followup period. Frequently, people assess drug use at the end of 1 year following the prevention intervention. The followup period should be determined in your study by the length of time you expect to be required before your program's effects would be visible through changes in people's intentions, attitudes, and/or behaviors. You must also consider the difficulty of recontacting people at a later date.

Effort Data

Remember, effort information tells you about the level and kind of effort going into your prevention program — the number of hours of parent training you provided, the names of people who participated in the training, the number of sessions each parent attended, and similar information. Effort data let you describe what you did to produce the effects you observe in your self-evaluation study. They are also needed to answer efficiency questions. You must ask "What do we need to record about this program, given our evaluation question?" if you want your program to be something other than a black box in your evaluation.

Effort data collection should occur while the program is being offered. Often, effort monitoring becomes part of every working day. Effort measurement must become routine. To ensure daily collection of needed information, you will have to design a collection tool that is seen as useful by the staff.

Data Collecting Responsibility

Once you have decided what type of data collection instruments to use and how often to collect the information you need, you must decide who will be responsible for collecting it. Different people may be responsible for collecting effort and effectiveness information. If you plan a followup of participants to assess drug use outcomes, you will need to identify a lead person for this activity. Alternatively, prevention service providers may be asked to collect effort or implementation information on the services they provide.

Before you decide who is going to collect the data, you should answer these questions about who might collect it:

- How interested are they in the information? If not interested, why not?
- If they're not interested, how will you get the data you need?
- How confident can you be in the accuracy of the data collected, given this strategy

The last question is a measure of the level of your staff's commitment to the evaluation. If you have identified the data you need, you know who will collect it, and you are confident of their ownership of the evaluation and trust that they will provide accurate information, you are well on your way to a successful evaluation. Often service providers are uninterested in recording things they already know on forms! The more you involve your staff in the evaluation process, the better the chances are that they will be interested in helping in the data collection. A tool to help you decide on a data collection approach for the kinds of data you need is show in figure 11.

Fill out this data collection plan for one piece of effort or process information and one outcome (effectiveness) data collection instrument you will use to complete your evaluation.

Figure 11. — Data Collection Plan

Instrument	What It Measures	Frequency of Collection	Who Collects	Accuracy of Data
1.				
2.				
3.				

Part 2: Pilot Test Instruments and Collection Plan

Once you have identified your measures, instruments, and collection procedures, build in some time to pilot test your data collection system. A pilot test lets you make sure all the instructions and words on your forms or questionnaires make sense to people. You can do this by asking either your staff, your family, or your friends to look at them and even to fill out the instruments to see what parts are clear or confusing. Once the wording and instructions are clear, try to arrange a sample of 20 or 30 people similar to people in your project to fill out the instruments. This pilot test will let you determine the ability of your data collection instrument to distinguish between people. If all 30 people in the pilot test answered a question yes, then the question doesn't distinguish between people and it probably should be dropped. A pilot test will help you ensure the reliability and validity of your data collection instruments.

Reliability is your assurance that your instrument or measure is consistent. Beginning an evaluation with an unreliable instrument is similar to a carpenter's building a house with a rubber ruler. If you are testing a questionnaire, and you give it to the same person twice within a short timespan, you would expect that person to give very similar answers on the questionnaire. If this doesn't happen, you probably have an unreliable questionnaire. This is called test-retest reliability.

Another kind of consistency or reliability is the internal consistency of items all seeking to measure the same concept. If you are seeking to increase family bonding and you have several questions on a survey to measure bonding, you would expect these questions to be generally answered the same way (i.e., consistently) by individuals. This is called internal consistency and is measured by a statistic called Cronbach's alpha.

Just because an instrument or measure is reliable does not ensure that it is valid. Validity is your assurance that an instrument measures what it is designed to measure. If you administer a self-report drug use questionnaire to known drug abusers, and discover that less than 5 percent of your sample reports any drug use in the past year, you should seriously question the validity of your instrument. Conversely, if you administer a drug use questionnaire to first graders and discover that 74 percent of your first graders have experimented with drugs or alcohol, you probably have an invalid measure.

Establishing the reliability and validity of new data collection instruments is time-consuming. That is why, whenever possible, you should use existing instruments in your self-evaluation study.

A pilot test allows you to answer questions beyond reliability and validity of measures. It is a systems check that encourages your staff/team to return and say "this won't work, because . . ." Taking the time to troubleshoot the process of data collection before your evaluation begins enables you to debug the evaluation in advance. Each time a member of your team suggests an improvement to the process, his or her individual ownership in the process will increase.

Part 3: Monitor Field Reports on Measures and Procedures

Reliability and ease of collection need to be assessed through field tests of instruments and procedures, with adjustments following if needed.

Staff/team agendas 5 and 6 are included at the end of the chapter to help you collaboratively plan for quality data collection instruments.

Describe your plan for pilot testing your measurement instruments and ensuring that your data collection system is workable here.

Instrument Pilot Test Plan

1. What are the instruments we will be using?
2. Who will read them to make sure they are appropriate for our target audience(s)?
3. Where will we find a sample of 20-30 people to fill out the instruments?
4. How will we know if the instruments are reliable?
5. How will we know if the instruments are valid?

STAFF/TEAM AGENDA 5
ORGANIZING AND COLLECTING DATA

ATTENDING: For a small program, the whole team or staff. For a larger program, representatives from each unit.

TIME: Schedule 2 hours.

OBJECTIVES: To ensure that all people know what information must be collected and why this information is critical to the success of the evaluation. To create a plan that will result in the efficient collection of data over the course of the evaluation.

I. **Review with your whole team the evaluation plan** and how each of the data collection measures relates to the success of this plan. Service providers will be asked by their clients, "Why is this necessary?" If your program staff know the answer, clients will be much more willing to respond openly and honestly. Also, measures of staff effort — "What did I do today?" — may be threatening to staff members who don't understand why the information is collected.

II. **Specify who will need to collect what, and pass out a schedule of collection times.** Be sure to allow time for discussion from the staff members who will be providing the information. Your goal is to have everyone in the information chain become owners of the process. The greatest threat to the integrity of your evaluation is insufficient or incomplete information. Without consistent data collection, you will not be able to relate your outcome results to program activities.

III. **Design a plan to monitor data collection.** Members of your team or staff must feel that giving the information they are asked to provide is an important part of their jobs. A plan that systematically follows up each week or every other week on the submission of data will reinforce the importance of data collection. (A little time given each week for team members to share with others "what they've done this week" will be a public recognition for both effort and measurement of that effort.)

IV. **Close the meeting with a plan for a 1-week or 2-week pilot test of the instruments to be used and the data collection system.** You will find that the information from service providers in the field will improve the validity and the efficiency of data collection. If team members' suggestions are incorporated into the design of instruments or into the systems of collection, they are much more likely to become "owners" of the evaluation process.

STAFF/TEAM AGENDA 6
TROUBLESHOOTING MEASURES AND COLLECTION PROCEDURES

ATTENDING: Team members who have worked in the design of the evaluation and others who have specific input from the pilot test of the measures and collection process.

TIME: Schedule 1 hour.

OBJECTIVE: To review the experience of the pretest period and adjust measures and collection procedures to ensure an efficient ongoing evaluation.

I. **Review the feedback from staff/team members on the pilot test of evaluation forms.** Listen to your staff/team's input on procedural improvements of the data collection process. Adjust the instruments and procedures based on this input.

II. **Draft a memo to all staff/team members outlining the changes in instruments and data collection procedures.**

Chapter 8

Data Analysis

Step 5: Analyzing the Data

Before you ever begin to collect data, you should have an analysis plan. If you wait until after you have collected your data to think through how you will analyze it, you may find that the analysis you want to do demands information that you failed to collect. Conversely, you may find that you have taxed your staff/team unnecessarily in collecting data that are of no use to your analysis.

Data analysis should be a rewarding activity. This is when you and your group will know if, in fact, you've made a difference in preventing drug abuse. Designing the analysis plan will maximize the chance of finding what difference your program has actually made in the lives of the people you serve. If your data analysis is incomplete or inadequate, you may fail to see the true effects of your program.

Part I: Choose Analysis Procedures

Your data analysis plan is your plot for summarizing the information you collect to answer the questions you've asked. There are two kinds of information that you may choose to report: descriptive statistics and relationship statistics.

Descriptive Analysis

Descriptive statistics answer the questions: How much? How many? What was the average? What was the rate? In what proportion? How much variation was there?

For example, descriptive statistics are used to answer these questions:

- "How many children reported knowing someone who uses marijuana?"
- "What proportion (or percentage) of our high school seniors reported drinking alcohol daily?"
- "What is the mean score on the Family Cohesion score of the FACES instrument for families trained in our program?"

The first task in preparing descriptive statistics is basic addition: add up the numbers in categories of interest and report the frequencies. Examples include the following:

- number of subjects in our study
- number of subjects by age, sex, or ethnic group
- number of preventive services we provided
- number of lessons taught
- number of parents in our parent classes
- number of students who took a dry pledge
- number of students reporting problems with alcohol or other drugs

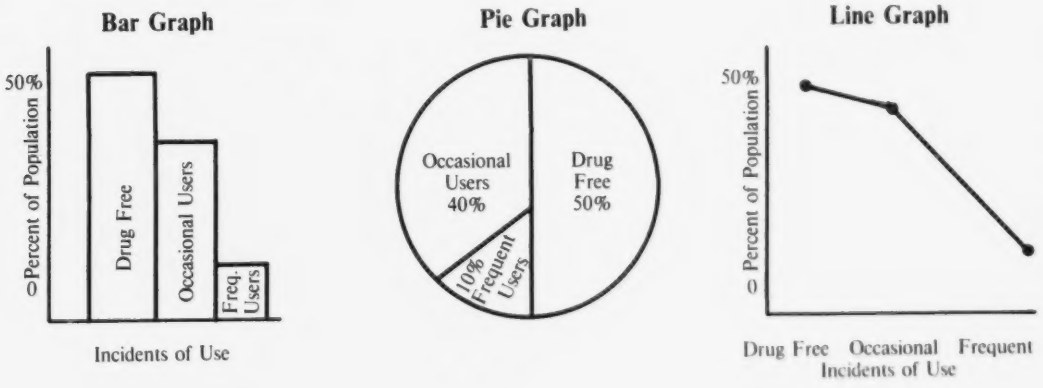
You may decide to report the numbers in terms of proportions or rates in each category. A percentage is one kind of rate. A rate is simply a fraction or ratio. It represents the number of times an event occurs (use of drugs, being suspended, etc.) divided by the total population of interest.

Parent Participation in Prevention Program by Ethnic Group

Ethnicity	Percentage of Parents
Black	24
American Indian	7
Asian	15
Hispanic	12
White	42

A third way to display frequency data is through a visual display such as a graph. If you make a graph, be sure that it is labeled clearly. A graph has the advantage of allowing the reader an immediate comparison of the frequencies reported that might be less apparent in a table or list of numbers. Figure 12 displays three graphs showing proportions of a sample with different drug outcomes.

Figure 12.—Proportion of Population Using Drugs: Three Sample Graphs



Measures of Central Tendency

To summarize frequencies, a measure of central tendency is used. Three measures of central tendency are the mean, mode, and median.

The mean is the most commonly reported measure of central tendency and is the simple arithmetic average of a list of values. Add the list of values and divide by the number of entries to get the mean.

Since the mean, or average, is subject to being affected by extreme high or low scores, the median or middle score is at times reported. If you listed 15 scores from low to high, the median would be the eighth score listed.

The third measure of central tendency is the mode or the score that occurred most frequently. The mode is rarely reported in evaluation studies.

For example, if you have the following scores on a five-point scale from 10 people:

Person	Score
#1	1
#2	3
#3	3
#4	4
#5	1
#6	5
#7	4
#8	1
#9	3
#10	1
Sum	26

The mean is $\frac{26}{10} = 2.6$.

The median is 3.

The mode is 1.
(There are four cases with a score of 1.)

Measures of Dispersion

Another important descriptive statistic is the standard deviation. The standard deviation is a measure of the dispersion or variability of scores. It gives you an idea of the distribution of scores without requiring that you list all scores.

The formula for calculating the standard deviation is:

$$\sqrt{\frac{\Sigma\,(X\text{-}M)^2}{N\text{-}1}}$$

The utility of presenting a measure of dispersion can be illustrated through the example of an evaluation that compared client satisfaction between two counselors. Each counselor was rated by clients on a five-point scale, with a "5" being "satisfactory in all ways." The standard deviation is calculated by first adding up the raw scores (19 for both counselors) and dividing by the number of scores to attain a mean (M = 3.8). Next, each individual's score is subtracted from the mean score to attain an X-M score. The X-M score is squared for all clients, and these squared scores are added up to form the sum (Σ) of (X-M). The sum of (X-M) is entered into the standard deviation formula, where it is divided by the number of scores minus 1 (in our example, 5 – 1 = 4). The square root of this number is the standard deviation.

Client Satisfaction

Counselor #1:	Raw Score	(X-M)	$(X\text{-}M)^2$
Client	3	–.8	.64
Satisfaction	4	.2	.04
Scores	4	.2	.04
	3	–.8	.64
	5	1.2	1.44
	$\Sigma = 19$		$\Sigma = 2.8$
	M = 3.8		

$$SD = \sqrt{\frac{2.8}{5.1}} = .83$$

Counselor #2:	Raw Score	(X-M)	$(X-M)^2$
Client	2	−1.8	3.24
Satisfaction	5	1.2	1.44
Scores	5	1.2	1.44
	2	−1.8	3.24
	5	1.2	1.44
	$\Sigma = 19$		$\Sigma = 10.80$
	$M = 3.8$		

$$SD = \sqrt{\frac{10.8}{5.1}} = 1.64$$

In this example, even though both counselors have the same mean satisfaction score (3.8), the standard deviations of scores (.83 versus 1.64) suggest that one counselor is getting consistent responses from her clients, while the other counselor's ratings vary widely. This information may be useful in supervision of the counselors. Why is one counselor getting such extreme scores? Does he work better with certain types of individuals? What can be done to decrease the variability in clients' responses to this counselor?

A second measure of dispersion is the range. The range is simply the distance between the highest and the lowest score. Since it reflects only two scores, it is not as valuable a statistic as the standard deviation, which considers all scores.

If your evaluation asks only effort questions, you may need to report only means and standard deviations to answer the questions you've raised. If you are concerned about your program's effectiveness, however, you will probably need to employ a relationship statistic to answer the question "Did we make a difference as compared with other programs, past performance, or a predetermined standard?"

Examining Relationships

In examining frequencies, you looked at individual variables. In examining relationships, you examine possible relationships between things. Through examining relationships, you can discover whether attending parenting classes reduces family drug use or how the teaching of problem-solving skills in classrooms affects the suspension rates of middle school students.

To know if there is a relationship between your prevention program and the outcomes you seek, you will want to answer three relationship questions:

- Is there a difference following our program between the groups we served and those with whom they are compared?
- Is that difference meaningful in a practical sense?
- Is that difference statistically significant?

In the following section, three methods of summarizing relationship data are discussed: contingency tables, comparisons of means, and correlational approaches. Also in this section, four basic tests for statistical significance are discussed. You do not need to learn how to do these statistical tests. You probably will want to learn the purpose for which each test is used, however, so that you can make

informed decisions about whether and when to ask for assistance from a resource person in completing your analyses.

Contingency Tables

One way to investigate the relationship between variables that interest you is to build a contingency table. A contingency table presents the number and proportion of people falling into two or more categories on two or more nominal variables. Nominal variables place people in categories, such as male versus female, or people receiving services versus people not receiving services, or people who have used drugs veresus people who have not. For example, if we were interested in the relationship between the teaching of problem-solving skills to seventh grade students and their rate of suspension from school, our table might look like that in figure 13.

Figure 13.—Effect of Teaching Problem Solving Skills on Suspension Rates of Seventh Grade Students (1985-86): A Contingency Table

	Taught Problem Solving N = 268	No Problem Solving N = 276	Totals
Number and proportion of students suspended	14 (5.2%)	36 (13%)	50 (10%)
Number and proportion of students not suspended	254 (94.8%)	240 (87%)	494 (90%)
Totals	268 (100%)	276 (100%)	544 (100%)

In this table, both actual counts of students and proportions have been listed. The contingency table shows that only 5.2 percent of the students who were taught problem-solving skills were suspended during the evaluation year, while 13 percent of the students who did not receive training were suspended in the same year. Overall, 10 percent of the student body was suspended from school in the 1985-86 school year.

Contingency tables can be developed to answer a number of different questions for a number of different variables. If you wanted to compare long-term and short-term suspension, for example, you would simply need to add another row to the table.

Is the difference shown in figure 13 meaningful in a practical sense? In this case, cutting the suspension rate of one group of students from 13 percent to 5.2 percent would certainly appear to have practical value. Prevention workers who found these results would probably want to recommend that this problem-solving curriculum be expanded to include all seventh grade students.

If you do identify a difference that appears to be meaningful, you may want to go one more step and determine if the differences are statistically significant. Tests of statistical significance tell you how likely your results were to have been obtained by chance alone. Traditionally, findings that have a greater than 5 percent likelihood of happening by chance alone are considered nonsignificant.

Do not confuse "meaning" or "practical importance" with "statistical significance." If the differences in your contingency table are not large enough to be of practical value or importance, little

reason exists to move to the next step of testing for statistical significance. In such a situation, testing to see if the results occurred by chance alone is unnecessary.

When you display your data through a contingency table, you usually use a chi-square test to determine statistical significance. In the contingency table displayed in figure 13, the chi-square value was statistically significant beyond the 5% level.

Statistical Significance

How important is it that your program is shown to make a difference that is statistically significant? If you operate under a grant that expects statistical tests of significance, or if you expect to publish reports of your program in professional journals, demonstration of statistical significance is important. For many purposes, your knowledge that the differences are meaningful in a practical sense is a valuable outcome in itself.

Statistical significance is often a tough test to pass. It requires either large differences between groups or a large number of participants in your study. Both of these factors work against small prevention programs finding statistical significance in self-evaluations.

Comparing Means

A second kind of comparison you can make between groups is a comparison between means. For example, you may want to compare the average frequency of alcohol use between students who received a prevention curriculum and students in classes where the curriculum was not offered. Assume that at the conclusion of the 10-week curriculum you asked each student to report the number of times he or she drank alcohol in the past month. By adding all the scores for each group and dividing by the number of students in that group, you would get the mean frequency of alcohol use for each group. You might find that students exposed to the curriculum reported an average or mean of three drinking events during the month, while the mean frequency of drinking in the comparison group was five times. Again, once you find such a difference, you need to decide whether this difference is large enough to be meaningful or important. You may also want to see if the difference is statistically significant.

When comparing means of two groups for statistical significance, you use a statistic called the t-test. If you are comparing more than two groups, you would employ analysis of variance, and if you wanted to compare more than two groups while controlling for some baseline measure, you would use a statistical procedure called analysis of covariance.

Read the following three examples, and decide which statistic you would use to test for significance.

Example 1: You are the developer of an innovative program to reduce adolescent drug use by building stronger home attachments through the teaching of communication skills to parents. You work with three groups of parents: a group in the Hispanic community, a group in the Black community, and a group in the Italian community. Although the three groups all have children of the same age, they vary greatly on measures of income and education. In the class, you administer a pretest and a posttest, that measures preferred problem-solving strategies when they're faced with a conflict with their adolescent child. You also ask them to tally the number of conflicts they have with their children for a 6-week period after the end of your class. You want to compare the three

group means on the posttest, as well as the group means for the number of conflicts tallied. Since you think that variables such as education may be a powerful factor in the problem-solving skill of parents, you decide to control for those variables in each group. The test of significance you would use is _____.

Example 2: You coordinate a prevention program that trains teen peers to counsel classmates about the risks of drug and alcohol use. A school district with two high schools has asked if you would test your program in one of their high schools. You decide to work only with the sophomore class in your first year. You hope to change both rates of student use of alcohol and drugs and student attitudes about substance abuse. The district has agreed to let you use the sophomore class from a second high school as your control group. At the end of the school year, you administer a survey to sophomore students in both the project school and in the control school. You want to compare the means of the two groups on each question to see if your program has made any significant differences in either drug and alcohol use or in attitudes about drug and alcohol use. The test of significance you would use is _____.

Example 3: You coordinate county-wide substance abuse prevention efforts. Within your county are three programs that all compete for a very small pot of funds that you have to distribute for county drug and alcohol prevention efforts. The programs are: a police department drug education program featuring a presentation by a former undercover narcotics agent, a school-focused assertiveness training program that uses role play to teach young people how to say no, and a parent group that sponsors athletes and other role models to come and talk in classrooms about healthy lifestyles. The two things that are common about all three programs is that they happen in schools and target middle-school-aged children. How do yiou decide who gets the funds? You decide to design an evaluation that will test the impact of each of the programs. You work with the principal and discover that a near random assignment of students has taken place in the scheduling of eighth grade social studies classes: You divide the eighth grade social studies classes into four groups; one will get the police program, a second will hear role models, a third will learn how to say no, and the fourth group will be a control group. You administer student drug use attitude surveys as posttests to each group. You want to compare the means on the posttests for each group to determine which group has the greatest impact and is most deserving of your funds. You will use the _____ statistic.

Answers: (1) analysis of covariance, (2) t-test, (3) analysis of variance

You may choose to use a correlation or regression coefficient to test the strength of a relationship between two ordinal or interval level variables. These are variables that measure amounts, frequencies, or scores on scales with increasing values. Regression approaches tell you whether one variable increases when you systematically increase or decrease the amount of a second variable. For example, if you increase the number of alcohol prevention lessons taught in the ninth grade, is there a corresponding decrease in the number of students referred to the office for alcohol-related offenses? Correlation simply tells the extent to which a straight line or linear relationship exists between two variables. For example, is there a relationship between the frequency of marijuana use and the frequency of alcohol use in your sample?

The strength of the regression coefficient or correlation between two variables can range from a +1 to a −1. If for each additional lesson you taught, there was a corresponding 10-percent reduction in alcohol-related referrals, you would have a perfect negative correlation of −1. If each additional lesson you taught had a corresponding 10-percent increase in referrals, your regression coefficient

would be +1. If the regression coefficient is 0, you know that no relationship exists between the number of alcohol prevention lessons and the number of alcohol offenses in the school.

If you are examining regression coefficients or correlations to assess your program's effects, it is important to remember that all you can say is that a relationship exists between the two variables. These statistics don't tell you whether the program or some other factor caused the relationship you observed.

To say that your program caused the outcomes you observed, you must be able to show three things: (1) a strong relationship exists between your program and the outcome you measure, (2) your program must have occurred before the change took place, and (3) you must rule out alternative explanations for the observed relationship.

Now, summarize your data analysis plans on the following summary sheet.

Data Analysis Summary

1. Write *** THE QUESTION *** here. _____
   _____
   _____
   _____.
2. Who's interested in my results? _____
   _____.
3. What descriptive information will I report?
   1. _____
   2. _____
   3. _____
   4. _____
   5. _____
4. What methods for analyzing relationships will I use?
   a. Contingency tables?
   b. Comparisons of Means
   c. Correlations?
   _____
   _____
   _____
5. How will I define a difference that is meaningful in a practical sense? _____
   _____
   _____
   _____
   _____.
6. Which test of significance will I use? _____
   _____.
   Why? _____
   _____.

Part 2: Design Tables and Graphs for Reporting Results

After you know what analysis approach you will be using with your data, and before you ever begin to collect the data, you should know how (what formats) you are going to use to report your findings. In chapter 9, you will have the opportunity to fill in these preliminary graphs and/or tables.

Part 3: Begin Collection of Data

As you can see, most of the work of an evaluation is done long before you collect your first data. Doing the hard work first ensures that you won't expend energy collecting data you don't need. Knowing why you need the data and how you will use it also gives meaning and purpose to the process for your staff/team.

Part 4: Monitor Data Collection Regularly

Don't assume that the information you need is being collected as planned. If your evaluation covers a program that operates for only a few weeks, your staff/team will probably maintain a high degree of commitment to the data collection plan. However, if your evaluation period is longer than a month, you will need to review regularly both the purpose of the data collection and the procedures. People have many demands on their time, and your staff/team's motivation for collecting information may wane if it isn't regularly reinforced.

A good way to keep your staff/team's interest in the evaluation process is to plan feedback sessions of preliminary findings as soon as there's something to report. (You can report such descriptive statistics as "the number of lessons taught this week" or "the number of parents who have participated in our program during the first 3 months.") Using monitoring data to reinforce the effort that your staff or team is making will help them see that these extra duties are a priority. You should keep your evaluation chart on display so everyone can identify where they are in the process.

Part 5: Analyze Data

Once your data are collected, you will need to ensure that you aren't missing some data before turning the information over to coders or data processing specialists. Some of the data may need to be transferred to forms that can be easily keypunched or entered directly into a computer. If you are planning hand tabulation, you might consider an afternoon work party involving many of those who were assigned to collect the data. Delegate tasks! The more your staff participate in this evaluation, the more they are going to take ownership in the process.

If your study is not too large, you will get some initial findings almost immediately. Calculating frequencies and filling in contingency tables will give you an indication of what you've accomplished before you attempt a statistical test.

The actual data analysis should be routine, since you have already planned each step of this process before you began collecting data. Staff/team agendas 7 and 8 will help you in planning and completing data analysis. Both agendas follow the end of this chapter.

Computers and Consultants

If you use a packaged computer analysis program, such as the Statistical Package for the Social Sciences (SPSS), you can obtain a significance test as well as descriptive statistics, such as frequencies, measures of central tendency, standard deviations, and correlations between variables your study investigates.

This handbook does not attempt to teach you how to do regression analysis, analysis of variance, or any other statistical test. What you need to be able to do is recognize which analysis routine is appropriate. The analysis can then be done on a computer by a person familiar with basic statistical analysis packages. This is a good time, however, to consider contacting one of the resources mentioned for technical assistance: expertise on your staff or local colleges and universities.

You will not need access to a mainframe computer for many of the tasks you have before you. A personal computer with a hard disk has the power to analyze data for the vast majority of prevention programs. If you have access to larger systems, your data can probably be processed faster; however, your processing costs may be higher.

Factors to consider in deciding what computer resources you will need include the following:

- Number of subjects
- Amount of data per subject
- Number of statistical analyses
- Frequency of reporting
- Availability of...
  - — Funds
  - — Personnel
  - — Equipment
  - — Analysis software programs such as the Statistical Package for the Social Sciences (SPSS)

If the number of subjects, amount of information, and number of statistical analyses to be done are large, use a computer for analyses. For smaller projects, a hand calculator will do the job.

HELP!!—A Cry from the Unnumbered Wilderness

At this point, you may think, "Is statistical analysis really necessary?" The question of whether it is really necessary should be answered by your purpose/audience matrix. When you recall who your audience is and the purpose for which the information is needed, you may find that statistical analyses aren't necessary. Remember, your question and your purpose for doing the evaluation will determine how much statistical analysis is needed.

A very pragmatic reason exists, however, for engaging in statistical testing in evaluations of prevention programs. Unlike treatment programs, prevention programs cannot point to case studies of recovering clients, rates of reduced recidivism, or numbers of clients employed to show that prevention has made a difference. Ultimately, prevention workers have to demonstrate that rates of drug experimentation, driving under the influence of alcohol, or other drug-related outcomes in target populations have changed. Statistical tests allow you to say whether the results you found were likely to have occurred by chance alone or were more likely the result of other factors, such as your prevention program.

STAFF/TEAM AGENDA 7
PLANNING FOR DATA ANALYSIS

ATTENDING: Staff members who have been a part of your evaluation team. Other staffers with an interest in data analysis or individuals with a social science research background who may serve as resource people for you. (All participants should have read chapter 8 of the handbook before this meeting.)

TIME: 2 hours

OBJECTIVES: Given your evaluation goals and objectives, a model of your intended outcomes, and instruments to measure effect and effort, create a data analysis plan that will tell you whether your program has made a difference.

I. Consider the resources that are available to you for data analysis—personal computer, mainframe computer, computer time, chapter 8 of this handbook, local expertise.

II. Choose analysis procedures that will answer the questions that you have asked, given the data you have collected.

STAFF/TEAM AGENDA 8
ANALYSIS OF DATA

ATTENDING: Staff members who have been a part of your evaluation team. Other staffers with an interest in data analysis or individual with a social science research background who may serve as resource people for you. (The various data sets that are going to be used in the analysis should be brought to the meeting for review of completeness.)

TIME: 2 hours

OBJECTIVES: To ensure that all data are collected and in a form acceptable for data analysis. To delegate responsibilities for completion of the analysis and establish a time line for its completion.

I. Review the data collected over the evaluation period to ensure that you have complete data. If information is missing, establish responsibility to recover missing data, or document why some data might not be present.

II. Delegate the analysis tasks. Establish a time line for completion of the analysis.

Chapter 9

Making Use of What You've Learned

Step 6: Reporting the Findings

In Step 1, you filled in a purpose/audience matrix that specified who was interested in your results. Now is the time to use that matrix to design your presentation to address your evaluation audience. Reports designed for your boss, or your board of directors, or your line staff, or your local media representatives all require customizing the presentation.

Don't underplay the importance of what you've found. These results represent a considerable investment by everyone in your program. If one of your audiences is your staff/team, you may want to schedule a 1-day retreat to present the findings in the morning and structure problem-solving sessions in the afternoon to create a plan for applying what you've learned. This is also an opportunity to debrief the evaluation process. Staff/team participation is as important at the end of the process as it was at the beginning of the process. If you are a program manager, you don't have time to be in the field each day to monitor your evaluation. Because of that, some of the results you find will be hard to explain. When you receive the input of all staff who were involved, however, the meaning and the implications of the findings will become more clear.

When you report findings to those who participate in the program, you can assume a level of knowledge that your board of directors or the local media may not have. In all cases, you should begin your report by "renewing the mission" or pointing out why you asked your particular evaluation question and what use you expect to make of the answer. You are then able to place this evaluation in the larger context of the overall program goals. If you report the findings of the evaluation without explaining how the answers you've found can be used by your target audience, you may be inviting a response of "So what?" Be sure to tell your audience why you asked the question, what you learned, and what you expect the audience to do with this information.

Be prepared to provide both an oral presentation of the results and a written summary as backup. Too many evaluation studies end up as shelf or file fillers—unused, in part, because people do not have or take the time to read them.

Most people prefer oral information to written information. Whether they are legislators, program managers, or board members, people like to be told what you've found and what you see as the implications for them. People want to know: "What did you learn?" and "What do you want us to do?" Give them both answers. Keep the oral presentation relatively simple. Share the highlights of your results, and describe what they imply for program change, maintenance, funding, etc., given your purpose and audience. Then, distribute a summary sheet of results. If you have invited the press to hear your results, you should have prepared a one-page press release that highlights the findings you see as most important.

Part 1: Complete "Dummy" Graphs and Tables for Reporting Findings and Plan Presentation of Data

At this point, it is time to plan your presentation of the evaluation results. Target this presentation for the most important audience you identified on your purpose/audience matrix.

REPORTING YOUR RESULTS

1. Write down your evaluation question here.

2. Draw one graph or table to display the results you hope you will find. (Consult the model graphs in chapter 8 for examples.) Be optimistic here. It's your chance to have the data come out just as you want.

3. Using the visual displays you have created, plan a presentation for your audience. In the presentation, tell them:

   a. What you set out to learn—your question.
   b. What you actually found.
   c. What you think these results mean to this audience.

Presentation Outline

Part 2: Role Play Presentation to Target Audience, Adding Data Needed to Respond to Audience Questions

Now, practice your presentation with your staff/team. Have your team members take the roles of your target audience, and role play your presentation to them. By doing this now, you will identify, before you even begin your evaluation project, the kinds of questions and reservations your target audience is likely to raise. Having anticipated these questions through this role play session, you can decide whether additional information should be collected during the evaluation to answer such questions. In short, by preparing now to use the evaluation results for the very purpose for which your study was designed, you will guarantee that the information you gather can be successfully used for this purpose.

You should role play one additional scenario. Change the information in your example graph or table so that it comes out just the opposite of what you hope you'll find. Now what will you do? Frequently, the first reaction is: "Bury it! Let's hide the information, and forget that an evaluation was done." But, if you look at that information again, you are likely to find that it is very useful after all—perhaps not for the purpose for which you originally designed it, but for another, equally important use. For example, information that you gathered in hopes of showing your program's success in preventing drug experimentation among seventh graders, in order to guarantee future funding for the program, may show that students in your program were as likely to experiment with drugs as students you did not serve. While the information may not be useful to obtain funding, it will very likely stimulate rethinking regarding the program itself and how it should be altered or improved to better achieve its goal of reducing drug experimentation.

Unanticipated findings need not be detrimental to the self-evaluating organization. They give you information to improve your work. Showing others that you seriously seek to achieve your goals and are willing to gather and use information on program outcomes to improve your prevention services demonstrates a commitment to self-improvement. Learning from the negative outcomes will build your credibility as an organization seriously committed to the goal of drug abuse prevention.

Part 3: Report Your Findings to Identified Audiences

You should now be prepared to confidently discuss both the findings and the implications of your program. Projecting your tables and/or graphs on an overhead projector is an excellent method of making the results and implications of your outcomes clear for your audience.

Part 4: Adjust Your Program Based on What You've Learned

Congratulations! You've just completed your first evaluation plan. The final step is to take what you've learned from this evaluation and apply it to the improvement of next year's program. That process may begin with an all-staff meeting, or it may involve selected representatives from your team.

Staff/team agendas 9 and 10 are included at the end of this chapter to assist your planning for the presentation of results.

Since your first evaluation experience has been successful, you may be tempted to greatly expand the scope of your next evaluation. Reflect for a moment on the joys of keeping it simple, however. One of the reasons for your success in your first evaluation is that you kept it simple. Beginning again with one or two new questions to answer and using any additional energies to ensure that the improvements suggested by the first evaluation become a reality would comprise a sensible plan. Nothing can be more discouraging to a staff than to give energy to identifying needs of program improvement and not to see those changes implemented.

This handbook will be a resource guide for future evaluations. What you have accomplished with one hypothetical question is only the beginning.

Enjoy evaluation!

STAFF/TEAM AGENDA 9
REPORTING THE FINDINGS

ATTENDING: Your whole staff or team and those individuals who have assisted you in the evaluation effort. This is one of the payoffs for the people in your group who have given extra time to ensure that you have complete, high-quality data. This should be a major event, perhaps coupled with a staff dinner or potluck lunch and time to talk about what it all means.

TIME: 2 to 3 hours

OBJECTIVE: To share the results of your evaluation.

Before your meeting, review all of your results. Do not bury outcomes that seem to reflect negatively on your program. They may be the key to making important improvements in your program. Also, don't overlook unintended outcomes. You may find some significant side effects of your program that were not anticipated by the questions you asked. After reviewing the data, have some preliminary interpretation to share with your team.

Decide who else might be interested in the findings of your evaluation. In a second meeting, you may want to include community representatives who may have an interest in your program, potential funders, and news media representatives. Don't forget to invite the participants or clients of your program as appropriate. They, too, have a large investment in your success.

Once you know to "whom" you will be presenting your data, decide on the formats that will best display the effects of your program—charts, graphs, text, overhead transparencies.

I. Review with your staff the model of the program and how this evaluation speaks to certain elements of the model.

II. Discuss the implementation results first. "This is what we did this year." That in itself is a summative report of effort that will give your team a greater appreciation for what can be accomplished by doing your job week in and week out. Too often, people get so caught up with the small problems of weekly work that it is hard to appreciate what has been accomplished over the long haul.

III. Discuss the outcomes, the effects of your group's work. This is one time in the year that you can say with some confidence that you have made a difference! Share the negative as well as the positive. Remember, evaluation is a way you improve what you do. Your service providers will be a great source of information as to "why" negative effects, noneffects, or unintended effects were found in an evaluation.

IV. Interpret the data from your perspective, and then invite your team to contribute their interpretations from the numbers that have been presented. Together, you will build a clear picture of what your program accomplished and how it was done.

V. Solicit input from all your team on how the program and/or the evaluation process may be improved from this first experience.

VI. Celebrate the accomplishments of your program and your staff!

STAFF/TEAM AGENDA 10
MAKING USE OF WHAT YOU'VE LEARNED

ATTENDING: All staff members involved in planning programs.

TIME: Schedule 3 hours.

OBJECTIVES: To use the results of this year's evaluation of effort, effectiveness, or efficiency questions in revising programs and procedures for the following year. Evaluation information should serve as one of the determiners of program revisions. (Other information to be considered at this planning meeting includes: changing needs of client population, program mandates from funding agency, recent innovations in service models, budget projections.)

I. Review the theoretical model of your program. You always need to be prepared to tie the "what" you plan to do to a model that explains "why" it is important that this be done. This can be particularly important in looking at evaluation results that usually speak to only part of a program. Once you "see" that you have answered some questions about one part of your program, it may be easier to identify which part of the program deserves a closer look in the following year.

II. After you have considered the effects of your evaluation, weight the effort and the efficiency of achieving those outcomes, to determine if your agency's resources were well spent.

Make the changes that the evaluation findings suggest.

References

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorder.* 3rd ed. Washington, DC: APA, 1980.

Botvin, G. and Eng, A. The efficacy of a multicomponent approach to the prevention of cigarette smoking. *Preventive Medicine* 11:199-211, 1982.

Best, A.J.; Flay, B.R.; Penz, C.L.; Towson, S.; Ryan, K.B.; Brown, S.K.; Dersell, M.W.; and D'Avenas, J.R. Smoking prevention and the concept of risk. *Journal of Applied Social Psychology* 19(3):257-273, 1984.

Campbell, D.T., and Stanley, J.C. *Experimental and Quasi-Experimental Designs for Research.* Chicago: Rand McNally, 1963.

Cook, T.D., and Campbell, D.T. *Quasi-Experimental Design and Analysis Issues for Field Settings.* Chicago: Rand McNally, 1979.

Dillman, D.A. *Mail and Telephone Surveys.* New York: Wiley, 1978.

Elliott, D.S., and Huizinga, D. "The Relationship Between Delinquent Behavior and ADM Problems." A paper presented at the ADAMHA/OJJDP Research Conference on Juvenile Offenders with Serious Drug, Alcohol, and Mental Health Problems, Bethesda, MD, 1984.

Fleming, J.P.; Kellam, S.G.; and Brown, C.H. Early predictors of age at first use of alcohol, marijuana and cigarettes. *Drug and Alcohol Dependence* 9: 285-303, 1982.

French, J.F.; Fisher, C.C.; and Costa, S.J. *Working with Evaluators.* Rockville, MD: NIDA, 1983.

Hawkins, J.D., Lishner, D.M.; Catalano, R.F.; and Howard, M.O. Childhood predictors of adolescent substance abuse: Toward an empirically grounded theory. *Journal of Children in Contemporary Society,* 18(1-2):11-48, 1986.

Hawkins, J.D. and Sloma, D. Recognizing the organizational contest: A strategy for evaluation research. *Administration in Social Work* 2(3), 1978.

Kandel, D.B. Epidemiological and psychosocial perspectives on adolescent drug use. *Journal of the American Academy of Child Psychiatry* 21(4):328-347, 1982.

Kandel, D.B.; Kessler, R.C.; and Margulies, R.S. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. *Journal of Youth and Adolescence* 7:13-40, 1978.

Luepker, T.V.; Pechacek, T.F.; and Murray, D.M. Saliva thiocyanate: A chemical indicator of cigarette smoking adolescents. *American Journal of Public Health* 71:1320-1324, 1981.

Pehacek, T.F. Modification of smoking behavior. In: *Smoking and Health: A Report of the Surgeon General.* DHEW Pub. No. (PHS) 79-50066. Washington, DC: U.S. Govt. Print. Off., 1979.

Robins, L.N., and Przybeck, T.R. *Age of Onset of Drug Use as a Factor in Drug Use and Other Disorders*, in C.L Jones and R.T. Battles (eds.) *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph No. 56. DHHS Pub. No. ADM 85-1385. Washington, DC: U.S. Govt. Print. Off., 1985. pp. 178-193.

Schinke, S.P., and Gilchrist, L.D. Primary prevention of tobacco smoking. *Journal of Social Work* 53(7):416-419, 1983.

Annotated Bibliography

Austin, Michael J., et al. *Evaluating Your Agency's Programs.* Beverly Hills, CA: Sage Publications, 1982. (A very readable discussion of the process of agency self-evaluation. It includes an extensive discussion of program effort, effectiveness, and efficiency.)

Campbell, Donald T., and Stanley, Julian C. *Experimental and Quasi-Experimental Designs for Research.* Chicago: Rand McNally, 1963. (A small but powerful book. Everything you need to know to understand basic research designs.)

Dillman, Don A. *Mail and Telephone Surveys.* New York: John Wiley and Sons, 1978. (A good resource for designing survey instruments.)

Elliott, Delbert S., and Huizinga, David. "The Relationship between Delinquent Behavior and ADM Problems." A paper presented at the ADAMHA/OJJDP Research Conference on Juvenile Offenders with Serious Drug, Alcohol, and Mental Health Problems, Bethesda, MD, 1984.

French, John F.; Fisher, Court C.; and Costa, Samuel J. *Working with Evaluators.* Rockville, MD: NIDA, 1983. (A guide for program managers on the issues surrounding evaluation of prevention programs. Includes several case studies.)

French, John F., and Kaufman, Nancy J. *Handbook for Prevention Evaluation.* Rockville, MD: NIDA, 1983. (Just about everything you need to know about prevention evaluation. It covers the same issues as the STEPP handbook in a more technical fashion.)

Guess, Lynn L., and Tuchfeld, Barry S. *Manual for Drug Abuse Treatment Program Self-Evaluation.* DHHS Pub. No. (ADM) 77-421. Washington, DC: NIDA, 1977. (This manual does for treatment programs what the STEPP program does for prevention programs. A quick resource for basic treatment program self-evaluation.)

Horowitz, Gideon. *Sadistic Statistics.* Wayne NJ: Avery Publishing, 1979. (A simple guide to statistics.)

Marlatt, G.A.; Stephens, R.S.; Kivlahan, D.; Briel, D.J.; and Banaji, Mahzarin. "Empirical Evidence on the Reliability and Validity of Self-Reports of Alcohol Use and Associated Behaviors." Paper presented at a workshop on the validity of self-report in alcoholism treatment research, Washington, DC, National Institute on Alcohol Abuse and Alcoholism, 1986.

National Institute on Drug Abuse. *Prevention Planning Workbook.* Rockville,MD: NIDA, 1981. (Outlines eight steps in a systematic prevention program planning process.)

Price, Richard H., and Smith, Sallie S. *A Guide to Evaluating Prevention Programs in Mental Health.* Rockville, MD: National Institute of Mental Health, Rockville, MD: 1985. (A manual designed to assist community mental health directors with the task of evaluating their programs.)

Wells, Elizabeth A.; Hawkins, J. David; and Catalano, Richard F. "Choosing Drug Use Measures For Treatment Outcome Studies: The Influence of Measurement Approach on Treatment Results." *International Journal of the Addiction*, in press. (A useful discussion of the issues that should be considered in the choice of drug use outcome measures.)

Appendix A

Evaluation Think Sheet

Evaluation Think Sheet

1. Close your eyes and try to picture your image of evaluation.....
   Now, take a minute to label that image and write it in the space below:

2. Before we begin, do you have questions that you expect this manual to answer for you? List these questions below:

1.
2.
3.

3. At this point, draw a simple model of your prevention program following the example displayed in figure 2, chapter 3.

A Model of My Prevention Program

Resources →	Program of Services →	Immediate Results →	Outcomes

4. Think about the nagging questions you have personally about your program or agency. Write two or three of them down in the space below:

I Wish I Knew

1.

2.

3.

5. Which of these questions are questions of effort? Which are questions of effectiveness? Which are questions of efficiency?

6. Jot down two questions you have about your program's efforts:

1.

2.

7. Jot down two questions you have about your program's effectiveness:

1.

2.

8. Jot down two questions you have about your program's efficiency:

1.

2.

9. Complete the purpose/audience matrix.

Purpose/Audience Matrix

Before deciding on an effectiveness question, identify why the information is needed. Why do we need to answer this question? What could we do with the information? This matrix attempts to help you clarify answers to these questions by outlining possible uses to which information may be put in an agency and possible audiences to whom the information might be addressed.

Place an "x" in each box of the matrix that represents the intersection of a purpose and audience for which you believe the answer to your question will be useful.

		Purpose				
		Planning & Development	Management Control and Operational Decisions	Secure Funding	Public Relations	???
Audience	Management					
	Service Providers					
	Funders					
	Other Agencies					
	Public or Community					
	Participants or Clients					
	???					

10. What is the effectiveness question you've chosen for your evaluation?

*****The Question*****

11. Complete the following exercises to choose your design and define your sample:

A. Considering the designs we've discussed, which one do you think will best answer the question you're asking?

_____

_____

B. Diagram that design in the space below, labeling the assignment process, the pretest, post-test, and treatment.

C. How will you draw your sample for your evaluation?

1. To what population should your answer apply?

2. What sample size will you need?

3. How will you draw your sample?

12. Operationalize your question so you will know what specific behaviors you're going to measure as outcomes of your evaluation.

Write "THE QUESTION" here: _____

_____

_____

_____

List the *long-term outcome* variables in your question		List specific measures of the variables
_____	=	_____
_____	=	_____
_____	=	_____

List the *immediate results* in your question		List specific measures of the immediate results
_____	=	_____
_____	=	_____
_____	=	_____

Rewrite your question with the immediate and longer term outcome variables operationalized:

_____

_____

_____

_____

_____

13. List the background data you will need to collect and your reason for wanting that information:

Background Info. Item	Reason for Collecting It

14. Answer these questions in the process of designing instruments to measure implementation.

Implementation Questions to Answer

1. _____
2. _____
3. _____
4. _____

How Will I Use This Information?

1. _____
2. _____
3. _____
4. _____

Who Should Be Involved in Instrument Design?

_____ _____

_____ _____

First Draft of My Form
(Complete on a Separate Sheet)

15. Fill out this data collection plan for one piece of effort or process information and one outcome (effectiveness) data collection instrument you will use to complete your evaluation.

Data Collection Plan				
Instrument	What It Measures	Frequency of Collection	Who Collects	Accuracy of Data
1.				
2.				
3.				

16. Describe your plan for pilot testing your measurement instruments and ensuring that your data collection system is workable.

INSTRUMENT PILOT TEST PLAN

1. What are the instruments I will be using?
2. Who will read them to make sure they are appropriate for my audience?
3. Where will I find a sample of 20-30 people to fill out the instruments?
4. How will I know if the instruments are producing reliable information?
5. How will I know if the instruments are producing valid information?

17. Use the following form to summarize your data analysis plans:

THE QUESTION

1. Who is interested in my results? _____

2. What descriptive information will I report?

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

3. What methods for analyzing relationships will I use?

   a. Contingency tables?

   b. Comparisons of Means?

   c. Correlations?

4. How will I define a difference that is meaningful in a practical sense? _____

5. Which test of significance will I use? _____

Why? _____

18. Use this outline to help you in preparing to report your results.

REPORTING RESULTS

1. Write down your evaluation question here:

2. Draw one graph or table to display the results you hope you will find. Be optimistic here. It's your chance to have the data come out just as you want them.

3. Using the visual displays you have created, plan a presentation for your audience. In the presentation, tell them:

   a. What you set out to learn—your question.

   b. What you actually found.

   c. What you think these results mean to this audience. (What you think should be done in light of this information.)

Presentation Outline

Appendix B

Survey Instrument

Survey Instrument

This Appendix contains one version of the self-report survey instrument used each year in the NIDA "Monitoring the Future" study to collect information from a sample of over 17,000 high school seniors in the United States. Four additional questions related to drug and alcohol use were selected from other versions of the survey instrument and are included after the survey form. Results of the survey are published annually by the National Institute on Drug Abuse (NIDA) and are available from ADAMHA Office for Substance Abuse (OSAP) Clearinghouse. You can select items or sets of items from this survey to use in your evaluation study if these items are appropriate to your evaluation questions. The instrument can also be consulted for format and style if you are creating your own questionnaires. By using items from this survey to measure drug-related and other outcomes, you can compare the results from people in your prevention evaluation project with the national trends and rates reported in this study. Items relating to drug and alcohol use begin in part B on page 5 of the survey.

At this writing, the most recent published report of this study available from NIDA is:

Drug Use among American High School Students, College Students, and Other Young Adults, National trends through 1985. Lloyd D. Johnston, Patrick M. O'Malley, Jerald G. Bachman. Rockville, Maryland: National Institute on Drug Abuse, 1986.

monitoring the future

a continuing study of the lifestyles and values of youth

This questionnaire is part of a nationwide study of high school seniors, conducted each year by the University of Michigan's Institute for Social Research. The questions ask your opinions about a number of things--the way things are now and the way you think they ought to be in the future. In a sense, many of your answers on this questionnaire will count as "votes" on a wide range of important issues.

If this study is to be helpful, it is important that you answer each question as thoughtfully and frankly as possible. All your answers will be kept strictly confidential, and will never be seen by anyone who knows you.

This study is completely voluntary. If there is any question that you or your parents would find objectionable for any reason, just leave it blank.

In a few months, we would like to mail each of you a summary of the nationwide results from this study. Also, in about a year we would like to mail another questionnaire to some of you, asking about how your plans have worked out and what's happening in your lives.

In order to include you in these mailings, we ask for your name and address on a special form at the end of this questionnaire. This form is to be torn out and handed in separately. Once the address form and the questionnaire have been separated, there is no way they can be matched again, except by using a special computer tape at the University of Michigan. The only purpose for that tape is to match a follow-up questionnaire with this one.

Other seniors have said that these questionnaires are very interesting and that they enjoy filling them out. We hope you will too. Be sure to read the instructions on the other side of this cover page before you begin to answer. Thank you very much for being an important part of this project.

1986 - 1987

INSTITUTE FOR SOCIAL RESEARCH
THE UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

INSTRUCTIONS

1. This is not a test, so there are no right or wrong answers; we would like you to work fairly quickly, so that you can finish.

2. All of the questions should be answered by marking one of the answer spaces. If you don't always find an answer that fits exactly, use the one that comes closest. If any question does not apply to you, or you are not sure of what it means, just leave it blank.

3. Your answers will be read automatically by a machine called an optical mark reader. Please follow these instructions carefully:

   - Use only the black lead pencil you have been given.
   - Make heavy black marks inside the circles.
   - Erase cleanly any answer you wish to change.
   - Make no other markings or comments on the answer pages, since they interfere with the automatic reading. (If you want to add a comment about any question, please use the space provided below.)

These kinds of markings will work:

These kinds of markings will NOT work:

(THIS SPACE FOR WRITTEN COMMENTS)

PART A

[redacted]

1. **Taking all things together, how would you say things are these days—would you say you're very happy, pretty happy, or not too happy these days?**

   ○ Very happy
   ○ Pretty happy
   ○ Not too happy

2. **The next questions ask about the kinds of things you might do. How often do you do each of the following?** (Mark one circle for each line.)

	Almost everyday	At least once a week	Once or twice a month	A few times a year	Never
a. Watch TV	①	②	③	④	⑤
b. Go to movies	①	②	③	④	⑤
c. Go to rock concerts	①	②	③	④	⑤
d. Ride around in a car (or motorcycle) just for fun	①	②	③	④	⑤
e. Participate in community affairs or volunteer work	①	②	③	④	⑤
f. Play a musical instrument or sing	①	②	③	④	⑤
g. Do creative writing	①	②	③	④	⑤
h. Actively participate in sports, athletics or exercising	①	②	③	④	⑤
i. Do art or craft work	①	②	③	④	⑤
j. Work around the house, yard, garden, car, etc.	①	②	③	④	⑤
k. Get together with friends, informally	①	②	③	④	⑤
l. Go shopping or window-shopping	①	②	③	④	⑤
m. Spend at least an hour of leisure time alone	①	②	③	④	⑤
n. Read books, magazines, or newspapers	①	②	③	④	⑤
o. Go to taverns, bars or nightclubs	①	②	③	④	⑤
p. Go to parties or other social affairs	①	②	③	④	⑤

3. **How much do you agree or disagree with each of the following statements?** (Mark one circle for each line.)

	Disagree	Mostly Disagree	Neither	Mostly Agree	Agree
a. In the United States, we put too much emphasis on making profits and not enough on human well-being	①	②	③	④	⑤
b. People are too much concerned with material things these days	①	②	③	④	⑤
c. Since it helps the economy to grow, people should be encouraged to buy more	①	②	③	④	⑤
d. There is nothing wrong with advertising that gets people to buy things they don't really need	①	②	③	④	⑤
e. There will probably be more shortages in the future, so Americans will have to learn how to be happy with fewer "things"	①	②	③	④	⑤

4. **Below are several ways that people have used to protest about serious social issues. How much do you approve or disapprove of these actions?** (Mark one circle for each line.)

	Strongly Approve	Approve	Disapprove	Strongly Disapprove	Don't Know, Or It Depends
a. Signing petitions	①	③	④	⑤	
b. Boycotting certain products or stores	①	③	④	⑤	
c. Lawful demonstrations	①	③	④	⑤	
d. Occupying buildings or factories	①	③	④	⑤	
e. Wildcat strikes	①	③	④	⑤	
f. Blocking traffic	①	③	④	⑤	
g. Damaging things	①	③	④	⑤	
h. Personal violence	①	③	④	⑤	

5. **Do you think that you would prefer having a mate for most of your life, or would you prefer not having a mate?**

⑤ Definitely prefer to have a mate
④ Probably prefer to have a mate
③ Not sure
② Probably prefer not to have a mate
① Definitely prefer not to have a mate

6. **Which do you think you are most likely to choose in the long run?**

③ Getting married
② I have no idea
① Not getting married

⑧ Am already married

7. **If you did get married (or are married). . .**

a. **How likely do you think it is that you would stay married to the same person for life?**

⑤ Very likely
④ Fairly likely
③ Uncertain
② Fairly unlikely
① Very unlikely

b. **How likely is it that you would want to have children?**

⑤ Very likely
④ Fairly likely
③ Uncertain
② Fairly unlikely
① Very unlikely

⑧ Already have child(ren)

The questions in the next column ask you to imagine different kinds of married life that you might have. We want you to think about different ways you might share responsibilities for working, taking care of the home, and taking care of children. Please indicate how acceptable for you each of the different arrangements would be.

8. **Imagine you are married and have no children.**

How would you feel about each of the following working arrangements? (Mark one circle for each line.)

	Not At All Acceptable	*Somewhat Acceptable*	*Desirable*
a. Husband works full-time, wife doesn't work	①	②	④
b. Husband works full-time, wife works about half-time	①	②	④
c. Both work full-time	①	②	④
d. Both work about half-time	①	②	④
e. Husband works about half-time, wife works full-time	①	②	④
f. Husband doesn't work, wife works full-time	①	②	④

9. **Imagine you are married and have one or more pre-school children.**

How would you feel about each of the following working arrangements? (Mark one circle for each line.)

a. Husband works full-time, wife doesn't work.	①	②	④
b. Husband works full-time, wife works about half-time	①	②	④
c. Both work full-time	①	②	④
d. Both work about half-time	①	②	④
e. Husband works about half-time, wife works full-time	①	②	④
f. Husband doesn't work, wife works full-time	①	②	④

10. **Imagine you are married and have one or more pre-school children. Imagine also that the husband is working full-time and the wife does not have a job outside the home.**

How would you feel about each of these arrangements for the day-to-day care of the child(ren)?

a. Wife does all child care	①	②	④
b. Wife does most of it	①	②	④
c. Both do it equally	①	②	④
d. Husband does most of it	①	②	④
e. Husband does all of it	①	②	④

The next section of this questionnaire is about government and public affairs.

11. Some people think about what's going on in government very often, and others are not that interested. How much of an interest do you take in government and current events?

① No interest at all
② Very little interest
③ Some interest
④ A lot of interest
⑤ A very great interest

12. Do you think some of the people running the government are crooked or dishonest?

① Most of them are crooked or dishonest
② Quite a few are
③ Some are
④ Hardly any are
⑤ None at all are crooked or dishonest

13. Do you think the government wastes much of the money we pay in taxes?

① Nearly all tax money is wasted
② A lot of tax money is wasted
③ Some tax money is wasted
④ A little tax money is wasted
⑤ No tax money is wasted

14. How much of the time do you think you can trust the government in Washington to do what is right?

① Almost always
② Often
③ Sometimes
④ Seldom
⑤ Never

15. Do you feel that the people running the government are smart people who usually know what they are doing?

① They almost always know what they are doing
② They usually know what they are doing
③ They sometimes know what they are doing
④ They seldom know what they are doing
⑤ They never know what they are doing

16. Would you say the government is pretty much run for a few big interests looking out for themselves, or is it run for the benefit of all the people?

① Nearly always run for a few big interests
② Usually run for a few big interests
③ Run some for the big interests, some for the people
④ Usually run for the benefit of all the people
⑤ Nearly always run for the benefit of all the people

17. Have you ever done, or do you plan to do, the following things? (Mark one circle for each line.)

	1 Probably Won't Do This	2 Don't Know	3 Probably Will Do This	4 Have Already Done This
a. Vote in a public election?	①	②	③	④
b. Write to public officials?	①	②	③	④
c. Give money to a political candidate or cause?	①	②	③	④
d. Work in a political campaign?	①	②	③	④
e. Participate in a lawful demonstration?	①	②	③	④
f. Boycott certain products or stores?	①	②	③	④

18. How much do you agree or disagree with each of the following statements? (Mark one circle for each line.)

	1 Disagree	2 Mostly Disagree	3 Neither	4 Mostly Agree	5 Agree
a. The U.S. should begin a gradual program of disarming whether other countries do or not	①	②	③	④	⑤
b. There may be times when the U.S. should go to war to protect the rights of other countries	①	②	③	④	⑤
c. The U.S. should be willing to go to war to protect its own economic interests	①	②	③	④	⑤
d. The only good reason for the U.S. to go to war is to defend against an attack on our own country	①	②	③	④	⑤
e. The U.S. does not need to have greater military power than the Soviet Union	①	②	③	④	⑤
f. The U.S. ought to have much more military power than any other nation in the world	①	②	③	④	⑤
g. Our present foreign policy is based on our own narrow economic and power interests	①	②	③	④	⑤
h. Servicemen should obey orders without question	①	②	③	④	⑤

19. This section deals with activities which may be against the rules or against the law. We hope you will answer all of these questions. However, if you find a question which you cannot answer honestly, we would prefer that you leave it blank. Remember, your answers will never be connected with your name.

During the LAST 12 MONTHS, how often have you. . .

	Not At All	Once	Twice	3 or 4 Times	5 or More Times
a. Argued or had a fight with either of your parents	○	○	○	○	○
b. Hit an instructor or supervisor	○	○	○	○	○
c. Gotten into a serious fight in school or at work	○	○	○	○	○
d. Taken part in a fight where a group of your friends were against another group	○	○	○	○	○
e. Hurt someone badly enough to need bandages or a doctor	○	○	○	○	○
f. Used a knife or gun or some other thing (like a club) to get something from a person	○	○	○	○	○
g. Taken something not belonging to you worth under $50	○	○	○	○	○
h. Taken something not belonging to you worth over $50	○	○	○	○	○
i. Taken something from a store without paying for it	○	○	○	○	○
j. Taken a car that didn't belong to someone in your family without permission of the owner	○	○	○	○	○
k. Taken part of a car without permission of the owner	○	○	○	○	○
l. Gone into some house or building when you weren't supposed to be there	○	○	○	○	○
m. Set fire to someone's property on purpose	○	○	○	○	○
n. Damaged school property on purpose	○	○	○	○	○
o. Damaged property at work on purpose	○	○	○	○	○
p. Gotten into trouble with police because of something you did	○	○	○	○	○

20. The next questions are about some things which may have happened TO YOU.

During the LAST 12 MONTHS, how often. . .

	Not At All	Once	Twice	3 or 4 Times	5 or More Times
a. Has something of yours (worth under $50) been stolen?	○	○	○	○	○
b. Has something of yours (worth over $50) been stolen?	○	○	○	○	○
c. Has someone deliberately damaged your property (your car, clothing, etc.)?	○	○	○	○	○
d. Has someone injured you with a weapon (like a knife, gun, or club)?	○	○	○	○	○
e. Has someone threatened you with a weapon, but not actually injured you?	○	○	○	○	○
f. Has someone injured you on purpose without using a weapon?	○	○	○	○	○
g. Has an unarmed person threatened you with injury, but not actually injured you?	○	○	○	○	○

[redacted]

21. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some? (Mark one circle for each line.)

	Probably Impossible	Very Difficult	Fairly Difficult	Fairly Easy	Very Easy
a. Marijuana (pot, grass)	①	②	③	④	⑤
b. LSD	①	②	③	④	⑤
c. Some other psychedelic (mescaline, peyote, psilocybin, PCP, etc.)	①	②	③	④	⑤
d. Amphetamines (uppers, pep pills, bennies, speed)	①	②	③	④	⑤
e. Barbiturates (downers, goofballs, reds, yellows, etc.)	①	②	③	④	⑤
f. Tranquilizers	①	②	③	④	⑤
g. Cocaine	①	②	③	④	⑤
h. Heroin (smack, horse)	①	②	③	④	⑤
i. Some other narcotic (methadone, opium, codeine, paregoric, etc.)	①	②	③	④	⑤

PART B

The following questions are about cigarette smoking.

1. **Have you ever smoked cigarettes?**

   ① Never–GO TO QUESTION **3**
   ② Once or twice
   ③ Occasionally but not regularly
   ④ Regularly in the past
   ⑤ Regularly now

2. **How frequently have you smoked cigarettes during the past 30 days?**

   ① Not at all
   ② Less than one cigarette per day
   ③ One to five cigarettes per day
   ④ About one-half pack per day
   ⑤ About one pack per day
   ⑥ About one and one-half packs per day
   ⑦ Two packs or more per day

3. **Next we want to ask you about drinking alcoholic beverages, including beer, wine, and liquor.**

   Have you ever had any beer, wine, or liquor to drink?

   ① No–GO TO THE **TOP OF THE NEXT COLUMN**
   ② Yes

4. **On how many occasions have you had alcoholic beverages to drink...** (Mark one circle for each line.)

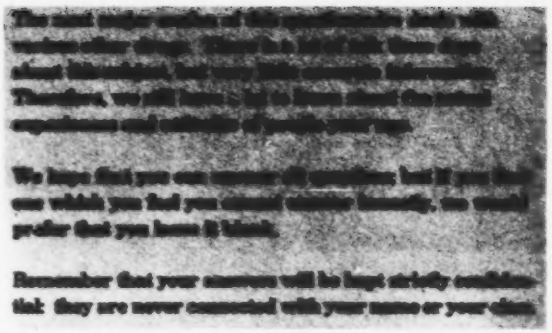
	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or More
a. ...in your lifetime?	○	○	○	○	○	○	○
b. ...during the last 12 months?	○	○	○	○	○	○	○
c. ...during the last 30 days?	○	○	○	○	○	○	○

5. **On the occasions that you drink alcoholic beverages, how often do you drink enough to feel pretty high?**

   ① On none of the occasions
   ② On few of the occasions
   ③ On about half of the occasions
   ④ On most of the occasions
   ⑤ On nearly all of the occasions

6. **Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row? (A "drink" is a glass of wine, a bottle of beer, a shot glass of liquor, or a mixed drink.)**

   ① None
   ② Once
   ③ Twice
   ④ Three to five times
   ⑤ Six to nine times
   ⑥ Ten or more times


We hope that you can answer all questions, but if you feel
Remember that your answers will be kept strictly confiden
that they are never connected with your name or your class.

7. **On how many occasions (if any) have you used marijuana (grass, pot) or hashish (hash, hash oil)...** (Mark one circle for each line.)

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or More
a. ...in your lifetime?	○	○	○	○	○	○	○
b. ...during the last 12 months?	○	○	○	○	○	○	○
c. ...during the last 30 days?	○	○	○	○	○	○	○

8. **On how many occasions (if any) have you used LSD ("acid")...**

	0	1-2	3-5	6-9	10-19	20-39	40 +
a. ...in your lifetime?	○	○	○	○	○	○	○
b. ...during the last 12 months?	○	○	○	○	○	○	○
c. ...during the last 30 days?	○	○	○	○	○	○	○

9. **On how many occasions (if any) have you used psychedelics other than LSD (like mescaline, peyote, psilocybin, PCP)...**

	0	1-2	3-5	6-9	10-19	20-39	40 +
a. ...in your lifetime?	○	○	○	○	○	○	○
b. ...during the last 12 months?	○	○	○	○	○	○	○
c. ...during the last 30 days?	○	○	○	○	○	○	○

10. **On how many occasions (if any) have you used cocaine (sometimes called "coke", "crack", "rock")...**

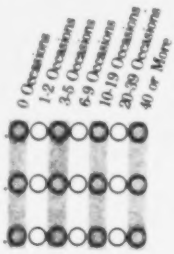
	0	1-2	3-5	6-9	10-19	20-39	40 +
a. ...in your lifetime?	○	○	○	○	○	○	○
b. ...during the last 12 months?	○	○	○	○	○	○	○
c. ...during the last 30 days?	○	○	○	○	○	○	○

11. **Amphetamines have been prescribed by doctors to help people lose weight or to give people more energy. They are sometimes called uppers, ups, speed, bennies, dexies, pep pills, and diet pills. Drugstores are not supposed**

BEST COPY AVAILABLE

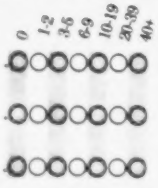
to sell them without a prescription from a doctor. Amphetamines do NOT include any non-prescription drugs, such as over-the-counter diet pills (like Dexatrim®) or stay-awake pills (like No-Doz®), or any mail-order drugs.

On how many occasions (if any) have you taken amphetamines on your own–that is, without a doctor telling you to take them. . .



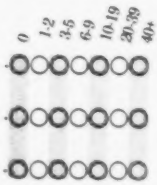
12. On how many occasions (if any) have you used quaaludes (quads, soapers, methaqualone) on your own–that is, without a doctor telling you to take them. . .

13. Barbiturates are sometimes prescribed by doctors to help people relax or get to sleep. They are sometimes called downs, downers, goofballs, yellows, reds, blues, rainbows. On how many occasions (if any) have you taken barbiturates on your own–that is, without a doctor telling you to take them. . .



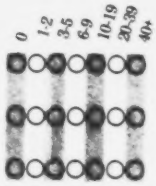
14. Tranquilizers are sometimes prescribed by doctors to calm people down, quiet their nerves, or relax their muscles. Librium, Valium, and Miltown are all tranquilizers. On how many occasions (if any) have you taken tranquilizers on your own–that is, without a doctor telling you to take them. . .

15. On how many occasions (if any) have you used heroin (smack, horse, skag). . .

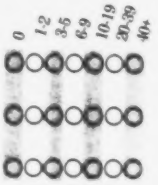


16. There are a number of narcotics other than heroin, such as methadone, opium, morphine, codeine, demerol, paregoric, talwin, and laudanum. These are sometimes prescribed by doctors.

On how many occasions (if any) have you taken narcotics other than heroin on your own–that is, without a doctor telling you to take them. . .



17. On how many occasions (if any) have you sniffed glue, or breathed the contents of aerosol spray cans, or inhaled any other gases or sprays in order to get high. . .



PART C

These next questions ask for some background information about yourself.

1. In what year were you born?

① Before '66	③ 1967	⑤ 1969	⑦ 1971
② 1966	④ 1968	⑥ 1970	⑧ After 1971

2. In what month were you born?

① January	④ April	⑦ July	⑩ October
② February	⑤ May	⑧ August	⑪ November
③ March	⑥ June	⑨ September	⑫ December

3. What is your sex? ① Male ② Female

4. How do you describe yourself?

① American Indian
② Black or Afro-American
③ Mexican American or Chicano
④ Puerto Rican or other Latin American
⑤ Oriental or Asian American
⑥ White or Caucasian
⑦ Other

5. **Where did you grow up mostly?**

① On a farm
② In the country, not on a farm
③ In a small city or town (under 50,000 people)
④ In a medium-sized city (50,000 - 100,000)
⑤ In a suburb of a medium-sized city
⑥ In a large city (100,000 - 500,000)
⑦ In a suburb of a large city
⑧ In a very large city (over 500,000)
⑨ In a suburb of a very large city
⓪ Can't say; mixed

6. **What is your present marital status?**

① Married
② Engaged
③ Separated/divorced
④ Single

7. **How many brothers and sisters do you have? (Include step-brothers and sisters and half-brothers and sisters.)**

	None	One	Two	Three	Four	Five	Six or more
a. Older brothers and sisters		①		③		⑤	
b. Younger brothers and sisters		①		③		⑤	

7c. **Which of the following people live in the same household with you?** (Mark all that apply.)

- ○ I live alone
- ○ Father (or male guardian)
- ○ Mother (or female guardian)
- ○ Brother(s) and/or sister(s)
- ○ Grandparent(s)
- ○ My husband/wife
- ○ My children
- ○ Other relative(s)
- ○ Non-relative(s)

8. **What is the highest level of schooling your father completed?**

- ○ Completed grade school or less
- ○ Some high school
- ○ Completed high school
- ○ Some college
- ○ Completed college
- ○ Graduate or professional school after college
- ○ Don't know, or does not apply

9. **What is the highest level of schooling your mother completed?**

- ○ Completed grade school or less
- ○ Some high school
- ○ Completed high school
- ○ Some college
- ○ Completed college
- ○ Graduate or professional school after college
- ○ Don't know, or does not apply

10. **Did your mother have a paid job (half-time or more) during the time you were growing up?**

① No
② Yes, some of the time when I was growing up
③ Yes, most of the time
④ Yes, all or nearly all of the time

11. **How would you describe your political preference?** (Mark one.)

① Strongly Republican
② Mildly Republican
③ Mildly Democrat
④ Strongly Democrat
⑤ American Independent Party
⑥ No preference, independent
⑦ Other

⑧ Don't know, haven't decided

12. **How would you describe your political beliefs?** (Mark one.)

① Very conservative
② Conservative
③ Moderate
④ Liberal
⑤ Very liberal
⑥ Radical

⑧ None of the above, or don't know

13. **The next three questions are about religion.**

a. **What is your religious preference?**

① Baptist
② Churches of Christ
③ Disciples of Christ
④ Episcopal
⑤ Lutheran
⑥ Methodist
⑦ Presbyterian
⑧ United Church of Christ
⑨ Other Protestant
⑩ Unitarian
⑪ Roman Catholic
⑫ Eastern Orthodox
⑬ Jewish
⑭ Latter Day Saints
⑮ Other religion
⑯ None

b. **How often do you attend religious services?**

① Never
② Rarely
③ Once or twice a month
④ About once a week or more

c. **How important is religion in your life?**

① Not important
② A little important
③ Pretty important
④ Very important

14. When are you most likely to graduate from high school?

① By this June
② July to January
③ After next January

④ Don't expect to graduate

15. Which of the following best describes your present high school program?

① Academic or college prep
② General
③ Vocational, technical, or commercial
④ Other, or don't know

16. Compared with others your age throughout the country, how do you rate yourself on school ability?

17. How intelligent do you think you are compared with others your age?

	Far Below Average	Below Average	Slightly Below Average	Average	Slightly Above Average	Above Average	Far Above Average
16.	①	②	③	④	⑤	⑥	⑦
17.	①	②	③	④	⑤	⑥	⑦

18. During the LAST FOUR WEEKS, how many whole days of school have you missed...

	None	1 Day	2 Days	3 Days	4 to 5 Days	6 to 10 Days	11 or More
a. Because of illness	○	○	○	○	○	○	○
b. Because you skipped or "cut"	○	○	○	○	○	○	○
c. For other reasons	○	○	○	○	○	○	○

19. During the last four weeks, how often have you gone to school, but skipped a class when you weren't supposed to?

① Not at all
② 1 or 2 times
③ 3-5 times
④ 6-10 times
⑤ 11-20 times
⑥ More than 20 times

20. Which of the following best describes your average grade so far in high school?

⑨ A (93-100)
⑧ A- (90-92)
⑦ B+ (87-89)
⑥ B (83-86)
⑤ B- (80-82)
④ C+ (77-79)
③ C (73-76)
② C- (70-72)
① D (69 or below)

21. How likely is it that you will do each of the following things after high school? (Mark one for each line.)

	Definitely Won't	Probably Won't	Probably Will	Definitely Will
a. Attend a technical or vocational school	①	②	③	④
b. Serve in the armed forces	①	②	③	④
c. Graduate from a two-year college program	①	②	③	④
d. Graduate from college (four-year program)	①	②	③	④
e. Attend graduate or professional school after college	①	②	③	④

22. Suppose you could do just what you'd like and nothing stood in your way. How many of the following things would you WANT to do? (Mark ALL that apply.)

○ a. Attend a technical or vocational school
○ b. Serve in the armed forces
○ c. Graduate from a two-year college program
○ d. Graduate from college (four-year program)
○ e. Attend graduate or professional school after college
○ f. None of the above

23. On the average over the school year, how many hours per week do you work in a paid or unpaid job?

① None
② 5 or less hours
③ 6 to 10 hours
④ 11 to 15 hours
⑤ 16 to 20 hours
⑥ 21 to 25 hours
⑦ 26 to 30 hours
⑧ More than 30 hours

24. During an average week, how much money do you get from...

	None	$1 - 5	$6 - 10	$11 - 20	$21 - 35	$36 - 50	$51 - 75	$76 - 125	$126+
a. A job or other work	○	○	○	○	○	○	○	○	○
b. Other sources (allowances, etc.)	○	○	○	○	○	○	○	○	○

25. During a typical week, on how many evenings do you go out for fun and recreation?

○ Less than one
○ One
○ Two
○ Three
○ Four or five
○ Six or seven

26. On the average, how often do you go out with a date (or your spouse, if you are married)?

① Never
② Once a month or less
③ 2 or 3 times a month
④ Once a week
⑤ 2 or 3 times a week
⑥ Over 3 times a week

27. During an average week, how much do you usually drive a car, truck, or motorcycle?

① Not at all
② 1 to 10 miles
③ 11 to 50 miles
④ 51 to 100 miles
⑤ 100 to 200 miles
⑥ More than 200 miles

28. Within the LAST 12 MONTHS how many times, if any, have you received a ticket (OR been stopped and warned) for moving violations, such as speeding, running a stop light, or improper passing?

⓪ None–GO TO QUESTION **30**
① Once
② Twice
③ Three times
④ Four or more times

29. How many of these tickets or warnings occurred after you were. . .

	None	One	Two	Three	Four +
a. Drinking alcoholic beverages?	⓪	①	②	③	④
b. Smoking marijuana or hashish?	⓪	①	②	③	④
c. Using other illegal drugs?	⓪	①	②	③	④

30. We are interested in any accidents which occurred while you were driving a car, truck, or motorcycle. ("Accidents" means a collision involving property damage or personal injury–not bumps or scratches in parking lots.)

During the LAST 12 MONTHS, how many accidents have you had while you were driving (whether or not you were responsible)?

⓪ None–GO TO QUESTION **32**
① One
② Two
③ Three
④ Four or more

31. How many of these accidents occurred after you were. . .

	None	One	Two	Three	Four +
a. Drinking alcoholic beverages?	⓪	①	②	③	④
b. Smoking marijuana or hashish?	⓪	①	②	③	④
c. Using other illegal drugs?	⓪	①	②	③	④

[redacted]

What is, or will be, your branch of service?

① Army
② Navy
③ Marine Corps
④ Air Force
⑤ Coast Guard
⑥ Uncertain

33. Do you expect to be an officer?

① No
② Uncertain
③ Yes

34. Do you expect to have a career in the Armed Forces?

① No
② Uncertain
③ Yes

PART D

This section asks for your views and feelings about a number of different things.

1. How satisfied are you with your life as a whole these days?

① Completely dissatisfied
② Quite dissatisfied
③ Somewhat dissatisfied
④ Neither, or mixed feelings
⑤ Somewhat satisfied
⑥ Quite satisfied
⑦ Completely satisfied

2. These next questions ask you to guess how well you might do in several different situations.
(Mark one circle for each line.)

How good do you think you would be. . .	Poor	Not So Good	Fairly Good	Good	Very Good	Don't Know
a. As a husband or wife?	①	②	③	④	⑤	⑥
b. As a parent?	①	②	③	④	⑤	⑥
c. As a worker on a job?	①	②	③	④	⑤	⑥

3. Some people think a lot about the social problems of the nation and the world, and about how they might be solved. Others spend little time thinking about these issues. How much do you think about such things?

① Never
② Seldom
③ Sometimes
④ Quite often
⑤ A great deal

4. **Now we'd like you to make some ratings of how honest and moral the people are who run the following organizations.** (Mark one circle for each line.)
To what extent are there problems of dishonesty and immorality in the leadership of. . .

	Not At All	Slight	Moderate	Considerable	Great	No Opinion
a. Large corporations?	1	2	3	4	5	6
b. Major labor unions?	1	2	3	4	5	6
c. The nation's colleges and universities?	1	2	3	4	5	6
d. The nation's public schools?	1	2	3	4	5	6
e. Churches and religious organizations?	1	2	3	4	5	6
f. The national news media (TV, magazines, news services)?	1	2	3	4	5	6
g. The Presidency and the administration?	1	2	3	4	5	6
h. Congress–that is, the U.S. Senate and House of Representatives?	1	2	3	4	5	6
i. The U.S. Supreme Court?	1	2	3	4	5	6
j. All the courts and the justice system in general?	1	2	3	4	5	6
k. The police and other law enforcement agencies?	1	2	3	4	5	6
l. The U.S. military?	1	2	3	4	5	6

5. **How much do you agree or disagree with each of the following statements?** (Mark one circle for each line.)

	Disagree	Mostly Disagree	Neither	Mostly Agree	Agree
a. There is too much competition in this society	1	2	3	4	5
b. Too many young people are sloppy about their grooming and clothing and just don't care how they look	1	2	3	4	5
c. There is too much hard rock music on the radio these days	1	2	3	4	5
d. People should do their own thing, even if other people think it's strange	1	2	3	4	5
e. I get a real kick out of doing things that are a little dangerous	1	2	3	4	5
f. I like to test myself every now and then by doing something a little risky	1	2	3	4	5
g. I take a positive attitude toward myself	1	2	3	4	5
h. I feel I am a person of worth, on an equal plane with others	1	2	3	4	5
i. I am able to do things as well as most other people	1	2	3	4	5
j. On the whole, I'm satisfied with myself	1	2	3	4	5
k. I feel I do not have much to be proud of	1	2	3	4	5
l. Sometimes I think that I am no good at all	1	2	3	4	5
m. I feel that I can't do anything right	1	2	3	4	5
n. I feel that my life is not very useful	1	2	3	4	5

6. **How many of your friends would you estimate. . .**

	None	A Few	Some	Most	All
a. Smoke cigarettes?	1	2	3	4	5
b. Smoke marijuana (pot, grass) or hashish?	1	2	3	4	5
c. Take LSD?	1	2	3	4	5
d. Take other psychedelics (mescaline, peyote, PCP, etc.)?	1	2	3	4	5
e. Take amphetamines (uppers, pep pills, bennies, speed)?	1	2	3	4	5
f. Take quaaludes (quads, methaqualone)?	1	2	3	4	5
g. Take barbiturates (downers, goofballs, reds, yellows, etc.)?	1	2	3	4	5
h. Take tranquilizers?	1	2	3	4	5
i. Take cocaine?	1	2	3	4	5
j. Take heroin (smack, horse)?	1	2	3	4	5
k. Take other narcotics (methadone, opium, codeine, paregoric, etc.)?	1	2	3	4	5
l. Use inhalants (sniffing glue, aerosols, laughing gas, etc.)?	1	2	3	4	5
m. Drink alcoholic beverages (liquor, beer, wine)?	1	2	3	4	5
n. Get drunk at least once a week?	1	2	3	4	5

[redacted]

Lately there has been some attention paid to certain drugs, including "crack" (cocaine in chunks or rocks).

1. How many of your friends would you estimate. . .

	None	A Few	Some	Most	All
a. Take "crack" cocaine?	○	○	○	○	○
b. Take PCP (angel dust, crystal, peace pill, killer weed, supergrass, crystal cyclone)?	○	○	○	○	○
c. Take amyl or butyl nitrites (poppers, snappers, Locker Room, Vaporole, Rush, Kick, Bullet)?	○	○	○	○	○

2. How much do you think people risk harming themselves (physically or in other ways) if they. . .

	No Risk	Slight Risk	Moderate Risk	Great Risk	Can't Say, Drug Unfamiliar
a. Try cocaine in powder form once or twice	①	②	③	④	⑤
b. Take cocaine powder occasionally	①	②	③	④	⑤
c. Take cocaine powder regularly	①	②	③	④	⑤
d. Try "crack" cocaine once or twice	①	②	③	④	⑤
e. Take "crack" cocaine occasionally	①	②	③	④	⑤
f. Take "crack" cocaine regularly	①	②	③	④	⑤
g. Try PCP once or twice	①	②	③	④	⑤

3. On how many occasions (if any) have you used "crack" cocaine?

	0 Occasions	1-2 Occasions	3-5 Occasions	6-9 Occasions	10-19 Occasions	20-39 Occasions	40 or More Occasions
a. . . .in your lifetime?	○	○	○	○	○	○	○
b. . . .during the last 12 months?	○	○	○	○	○	○	○
c. . . .during the last 30 days?	○	○	○	○	○	○	○

4. On how many occasions (if any) have you used PCP?

	0	1-2	3-5	6-9	10-19	20-39	40+
a. . . .in your lifetime?	○	○	○	○	○	○	○
b. . . .during the last 12 months?	○	○	○	○	○	○	○
c. . . .during the last 30 days?	○	○	○	○	○	○	○

5. On how many occasions (if any) have you used amyl or butyl nitrites?

	0	1-2	3-5	6-9	10-19	20-39	40+
a. . . .in your lifetime?	○	○	○	○	○	○	○
b. . . .during the last 12 months?	○	○	○	○	○	○	○
c. . . .during the last 30 days?	○	○	○	○	○	○	○

6. When (if ever) did you FIRST do each of the following things?

	Never	Grade 6 or below	Grade 7 or 8	Grade 9 (Freshman)	Grade 10 (Sophomore)	Grade 11 (Junior)	Grade 12 (Senior)
a. Try "crack" cocaine	○	○	○	○	○	○	○
b. Try any other form of cocaine	○	○	○	○	○	○	○
c. Try PCP	○	○	○	○	○	○	○
d. Try amyl or butyl nitrites	○	○	○	○	○	○	○

7. How difficult do you think it would be for you to get each of the following, if you wanted some?

	Probably Impossible	Very Difficult	Fairly Difficult	Fairly Easy	Very Easy
a. "Crack" cocaine	①	②	③	④	⑤
b. Cocaine in powder form	①	②	③	④	⑤
c. PCP	①	②	③	④	⑤
d. Amyl or butyl nitrites	①	②	③	④	⑤

8. What is your best guess about whether your parents think you drink alcoholic beverages (beer, wine, liquor)?

① They feel sure I don't drink
② They think I probaby don't drink
③ I don't know, or they differ in whether they think I do
④ They think I probably drink
⑤ They feel sure (or know) that I drink

9. What's your best guess about whether your parents think you smoke marijuana?

① They feel sure I don't
② They think I probaby don't
③ I don't know, or they differ in whether they think I do
④ They think I probably do
⑤ They feel sure (or know) that I do

[redacted]

10. Do you favor or oppose a military draft at the present time?

⑤ Strongly favor
④ Mostly favor
③ No opinion, or mixed
② Mostly oppose
① Strongly oppose

11. Do you think any military draft in the U.S. should include women as well as men?

○ Yes ○ Uncertain ○ No

[redacted]

12. Some people like school very much. Others don't. How do you feel about going to school?

⑤ I like school very much
④ I like school quite a lot
③ I like school some
② I don't like school very much
① I don't like school at all

13. **About how many hours do you spend in an average week on all of your homework including both in school and out of school?**

○ 0 hours ○ 1-4 hours ○ 5-9 hours ○ 10-14 hours ○ 15-19 hours ○ 20-24 hours ○ 25 or more hours

14. **To what extent have you participated in the following school activities during this school year?**

	Not At All	Slight	Moderate	Considerable	Great
a. . . .school newspaper or yearbook		②		④	
b. . . .music or other performing arts		②		④	
c. . . .athletic teams		②		④	
d. . . .other school clubs or activities		②		④	

15. **In general, how much say or influence do you feel each of the following has on HOW YOUR SCHOOL IS RUN?** (Mark one circle for each line.)

	Little or No Influence	Some Influence	Moderate Influence	Considerable Influence	A Great Deal of Influence
a. The principal		②		④	
b. The teachers		②		④	
c. The students		②		④	
d. Parents of students		②		④	

16. **Have you had any drug education courses or lectures in school?**

① No—GO TO QUESTION ■
② No, and I wish I had—GO TO QUESTION ■
③ Yes

17. **Would you say that the information about drugs that you received in school classes or programs has. . .**

① Made you less interested in trying drugs.
② Not changed your interest in trying drugs.
③ Made you more interested in trying drugs.

18. **How many of the following drug education experiences have you had in high school?** (Mark all that apply.)

○ A special course about drugs
○ Films, lectures, or discussions in one of my regular courses
○ Films or lectures, outside of my regular courses
○ Special discussions ("rap" groups) about drugs

19. **Overall, how valuable were the experiences to you?**

① Little or no value
② Some value
③ Considerable value
④ Great value

■ **During the LAST TWO WEEKS, how many times (if any) have you driven a car, truck, or motorcycle after. . .**

	None	Once	Twice	3-5 times	6-9 times	10 or More
a. drinking alcohol?						
b. having 5 or more drinks in a row?						

21. **During the LAST TWO WEEKS, how many times (if any) have you been a passenger in a car. . .**

	None	Once	Twice	3-5 times	6-9 times	10 or More
a. when the driver had been drinking?						
b. when you think the driver had 5 or more drinks?						

22. **How often do you. . .**

	Never	Seldom	Sometimes	Most days	Nearly every day	Every day
a. Eat breakfast?	①	②	④	⑤	⑥	
b. Eat at least some green vegetables?	①	②	④	⑤	⑥	
c. Eat at least some fruit?	①	②	④	⑤	⑥	
d. Exercise vigorously (jogging, swimming, calisthenics, or any other active sports)?	①	②	④	⑤	⑥	
e. Get at least seven hours of sleep?	①	②	④	⑤	⑥	
f. Get less sleep than you think you should?	①	②	④	⑤	⑥	

	Never	Seldom	Sometimes	Often	Always	Does Not Apply
23. When you drive a car, how often do you wear a seatbelt?	①	②	③	④	⑤	⑥
24. When you are riding in the front passenger seat of a car, how often do you wear a seatbelt?	①	②	③	④	⑤	⑥

Thank you for taking the time to answer these questions. We hope you found them interesting. We are eager to tabulate your answers along with those of other high school seniors throughout the nation.

WHY YOUR NAME AND ADDRESS?

As we told you earlier, we'd like to send you a summary of the nationwide results of the present study, and in about a year we want to mail a similar questionnaire to some of you. In order to include you in these follow-ups, we would like to have an address where information will be sure to reach you during the coming year.

HOW IS CONFIDENTIALITY PROTECTED?

- **The information on this page will be used ONLY for mailing, and will always be kept separate from your answers. A special Grant of Confidentiality from the U.S. government protects all information gathered in this research project.**
- **The questionnaire and address pages will be collected separately, sealed immediately in separate envelopes, and sent to two different cities for processing.**
- **Once a questionnaire and address page have been separated, there is no way they can be matched, except by using a special computer tape at the University of Michigan. That tape contains the two DIFFERENT numbers that appear on the back of this address page and on the back of the questionnaire. These numbers will be used ONLY to match a follow-up questionnaire with this one.**

Before filling out this address page, please separate it from the rest of the questionnaire by FOLDING ALONG THE PERFORATED LINE AND TEARING CAREFULLY.

Please **PRINT** your name and the address where you can most likely be reached during the coming year.

Mr.
Miss
Ms. FIRST NAME INITIAL LAST NAME
Mrs.

STREET _____

CITY _____

STATE _____ ZIP _____

TELEPHONE NO. ( ) – _____
AREA

In case we should have trouble getting mail to you, if you move, please **PRINT** the name and address of one other person (with a different address than your own) who will know where to reach you in the future. (Examples of such a person: aunt or uncle, older sister or brother, or close friend.)

Mr.
Miss
Ms. FIRST NAME INITIAL LAST NAME
Mrs.

STREET _____

CITY _____

STATE _____ ZIP _____

TELEPHONE NO. ( ) – _____
AREA

THANK YOU AGAIN FOR YOUR HELP

"Attitudes of Friends Toward Drug Use"

8. How do you think your CLOSE FRIENDS feel (or would feel) about YOU doing each of the following things? (Mark one circle for each line.)

	Not Disapprove	Disapprove	Strongly Disapprove
a. Smoking one or more pack of cigarettes per day	①	②	③
b. Trying marijuana (pot, grass) once or twice	①	②	③
c. Smoking marijuana occasionally	①	②	③
d. Smoking marijuana regularly	①	②	③
e. Trying LSD once or twice	①	②	③
f. Trying an amphetamine (upper, pep pill, bennie, speed) once or twice	①	②	③
g. Trying cocaine once or twice	①	②	③
h. Taking cocaine occasionally	①	②	③
i. Taking one or two drinks nearly every day	①	②	③
j. Taking four or five drinks nearly every day	①	②	③
k. Having five or more drinks once or twice each weekend	①	②	③
l. Driving a car after having 1-2 drinks	①	②	③
m. Driving a car after having 5 or more drinks	①	②	③

"Age of First Use of Drugs"

106. When (if ever) did you FIRST do each of the following things? Don't count anything you took because a doctor told you to. (Mark one circle for each line.)

	Never	Grade 6 or below	Grade 7 or 8	Grade 9 (Freshman)	Grade 10 (Sophomore)	Grade 11 (Junior)	Grade 12 (Senior)
a. Smoke cigarettes on a daily basis	○	●	●	●	●	●	●
b. Try an alcoholic beverage—more than just a few sips	○	●	●	●	●	●	●
c. Try marijuana or hashish	○	●	●	●	●	●	●
d. Try LSD	○	●	●	●	●	●	●
e. Try a psychedelic other than LSD	○	●	●	●	●	●	●
f. Try amphetamines	○	●	●	●	●	●	●
g. Try quaaludes	○	●	●	●	●	●	●
h. Try barbiturates	○	●	●	●	●	●	●
i. Try tranquilizers	○	●	●	●	●	●	●
j. Try cocaine	○	●	●	●	●	●	●
k. Try heroin	○	●	●	●	●	●	●
l. Try any narcotic other than heroin	○	●	●	●	●	●	●
m. Smoke your first cigarette	○	●	●	●	●	●	●
n. Drink enough to feel drunk or very high	○	●	●	●	●	●	●

"Disapproval of Drug Use"

28. **Individuals differ in whether or not they disapprove of people doing certain things. Do YOU disapprove of people (who are 18 or older) doing each of the following?** (Mark one circle for each line.)

	Don't Disapprove	Disapprove	Strongly Disapprove
a. Smoking one or more packs of cigarettes per day	1	2	3
b. Trying marijuana (pot, grass) once or twice	1	2	3
c. Smoking marijuana occasionally	1	2	3
d. Smoking marijuana regularly	1	2	3
e. Trying LSD once or twice	1	2	3
f. Taking LSD regularly	1	2	3
g. Trying heroin (smack, horse) once or twice	1	2	3
h. Taking heroin occasionally	1	2	3
i. Taking heroin regularly	1	2	3
j. Trying a barbiturate (downer, goofball, red, yellow, etc.) once or twice	1	2	3
k. Taking barbiturates regularly	1	2	3
l. Trying an amphetamine (upper, pep pill, bennie, speed) once or twice	1	2	3
m. Taking amphetamines regularly	1	2	3
n. Trying cocaine once or twice	1	2	3
o. Taking cocaine regularly	1	2	3
p. Trying one or two drinks of an alcoholic beverage (beer, wine, liquor)	1	2	3
q. Taking one or two drinks nearly every day	1	2	3
r. Taking four or five drinks nearly every day	1	2	3
s. Having five or more drinks once or twice each weekend	1	2	3

"Perceived Risk of Drug Use"

23. **The next questions ask for your opinions on the effects of using certain drugs and other substances. First, how much do you think people risk harming themselves (physically or in other ways), if they...**

	No Risk	Slight Risk	Moderate Risk	Great Risk	Can't Say, Drug Unfamiliar
a. Smoke one or more packs of cigarettes per day	1	2	3	4	5
b. Try marijuana (pot, grass) once or twice	1	2	3	4	5
c. Smoke marijuana occasionally	1	2	3	4	5
d. Smoke marijuana regularly	1	2	3	4	5
e. Try LSD once or twice	1	2	3	4	5
f. Take LSD regularly	1	2	3	4	5
g. Try heroin (smack, horse) once or twice	1	2	3	4	5
h. Take heroin occasionally	1	2	3	4	5
i. Take heroin regularly	1	2	3	4	5
j. Try barbiturates (downers, goofballs, reds, yellows, etc.) once or twice	1	2	3	4	5
k. Take barbiturates regularly	1	2	3	4	5
l. Try amphetamines (uppers, pep pills, bennies, speed) once or twice	1	2	3	4	5
m. Take amphetamines regularly	1	2	3	4	5
n. Try cocaine once or twice	1	2	3	4	5
o. Take cocaine regularly	1	2	3	4	5
p. Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	1	2	3	4	5
q. Take one or two drinks nearly every day	1	2	3	4	5
r. Take four or five drinks nearly every day	1	2	3	4	5
s. Have five or more drinks once or twice each weekend	1	2	3	4	5
t. Take cocaine occasionally	1	2	3	4	5
u. Use smokeless tobacco regularly (chewing tobacco, plug, dipping tobacco, snuff)	1	2	3	4	5

Appendix C

Reference Tables

Table of Random Numbers

10	09	73	25	33	76	52	01	35	86	34	67	35	48	76	80	95	90	91	17
37	54	20	48	05	64	89	47	42	96	24	80	52	40	37	20	63	61	04	02
08	42	26	89	53	19	64	50	93	03	23	20	90	25	60	15	95	33	47	64
99	01	90	25	29	09	37	67	07	15	38	31	13	11	65	88	67	67	43	97
12	80	79	99	70	80	15	73	61	47	64	03	23	66	53	98	95	11	68	77
39	29	27	49	45	66	06	57	47	17	34	07	27	68	50	36	69	73	61	70
00	82	29	16	65	31	06	01	08	05	45	57	18	24	06	35	30	34	26	14
35	08	03	36	06	85	26	97	76	02	02	05	16	56	92	68	66	57	48	18
04	43	62	76	59	63	57	33	21	35	05	32	54	70	48	90	55	35	75	48
12	17	17	68	33	73	79	64	57	53	03	52	96	47	78	35	80	83	42	82
65	81	33	98	85	11	19	92	91	70	98	52	01	77	67	14	90	56	86	07
86	79	90	74	39	23	40	30	97	32	11	80	50	54	31	39	80	82	77	32
73	05	38	52	47	18	62	38	85	79	83	45	29	96	34	06	28	89	80	83
28	46	82	87	09	83	49	12	56	24	88	68	54	02	00	86	50	75	84	01
60	93	52	03	44	35	27	38	84	35	99	59	46	73	48	87	51	76	49	69
22	10	94	05	58	60	97	09	34	33	50	50	07	39	98	65	48	11	76	74
50	72	56	82	48	29	40	52	42	01	52	77	56	78	51	80	12	43	56	35
13	74	67	00	78	18	47	54	06	10	68	71	17	78	17	74	35	09	98	17
36	76	66	79	51	90	36	47	64	93	29	60	91	10	62	69	91	62	68	03
91	82	60	89	28	93	78	56	13	68	23	47	83	41	13	09	89	32	05	05
17	46	85	09	50	58	04	77	69	74	73	03	95	71	86	40	21	81	65	44
17	72	70	80	15	45	31	82	23	74	21	11	57	82	53	14	38	55	37	63
77	40	27	72	14	43	23	60	02	10	45	52	16	42	37	96	28	60	26	55
66	25	22	91	48	36	93	68	72	03	76	62	11	39	90	94	40	05	64	18
14	22	56	85	14	46	42	75	67	88	96	29	77	88	22	54	38	21	45	98
91	49	91	45	23	68	47	92	76	86	46	16	28	35	54	94	75	08	99	23
80	33	69	45	98	26	94	83	68	58	70	29	73	41	35	53	14	03	33	40
44	10	48	19	49	85	15	74	79	54	32	97	93	65	75	57	60	04	08	81
12	55	07	37	42	11	10	00	20	40	12	86	07	46	97	96	64	48	94	39
63	60	64	93	29	16	50	53	44	84	40	21	95	25	63	43	65	17	70	82
37	08	92	00	40	61	19	69	04	46	26	45	74	77	74	51	92	43	37	29
42	05	08	23	41	15	47	44	52	66	95	27	07	99	53	59	36	78	38	48
22	22	20	64	13	94	55	72	85	73	67	89	75	43	87	54	62	24	44	31
28	70	72	58	15	42	48	11	62	13	97	34	40	87	21	16	86	84	87	67
07	20	73	17	90	23	52	37	83	17	73	20	86	98	37	68	93	59	14	16

This table is reproduced with permission from tables of the Rand Corporation. Reprinted from Edwin B. Cox, ed., *Basic Tables in Business and Economics*. New York: McGraw-Hill, 1967.

Sample Sizes Required to Show Significance at the 95 Percent Level (One-Tailed Test) in Differences in Proportions in Groups of Equal Size*

p_2	p_1 = 05%	10%	15%	20%	25%	30%	35%	40%	45%
10%	418	—	—	—	—	—	—	—	—
20%	84	195	791	—	—	—	—	—	—
30%	42	67	120	269	1064	—	—	—	—
40%	27	37	53	83	145	319	1237	—	—
50%	19	24	31	42	60	92	159	344	1311
60%	14	17	21	27	34	45	63	95	162
70%	11	13	15	18	22	27	35	45	62
80%	9	10	11	13	16	18	22	27	33
90%	7	8	9	10	11	13	15	17	20

Note: p_1 = the proportion or percentage of a group having a particular characteristic.

p_2 = the comparable proportion observed in another group. (p_2 should be assigned to the group having the higher proportion.)

* Adapted from Table A-3, Joseph L. Fleiss, *Statistical Methods for Rates and Proportions*. New York: Wiley Interscience, 1973.

Index

accountability 2
agendas 5
analysis of covariance 65
analysis of variance 65
attrition 36
audience 18
background information 39
checklist instruments 43
Chi-square test 64
Cronbach's alpha 56
comparing means 64
comparing outcomes from different designs 28
comparing proportions 63
comparison group designs 26
computers and consultants 67
confidentiality and consent 52
contingency tables 63
control groups 25
correlation 65
costs 6
data analysis 59
delayed prevention design 25
descriptive analysis 59
effectiveness questions 14
efficiency questions 16
effort data 53
effort questions 12
evaluation (defined) 1
evaluation design 22
Evaluation Think Sheet 81
experimental designs 25
experts 6
frequencies 59
Gaining and Maintaining School Access for Your Evaluation 50
graphs 60
historical effects 23
implementation instrument 46
interrater reliability 55
interaction instruments 52
intermediate results 35
internal consistency 56
interviews 48
invalid measure 56
mean 60
measures of central tendency 60
measures of dispersion 61
measures of outcome 34
measures of time use 43

measuring immediate results 35
median 61
mode 61
monitor data collection 67
observational data 50
operationalizing research questions 37
organizing and collecting data 48
outcome data 47
outcome enumeration 34, 40
outcome evaluation 34, 40
pilot test 87
population study 32
posttest-only design 27
presentation of the data 71, 72
pretest-posttest design 24
prevention (defined) 1
process evaluation 8, 9
program adjustment 44
program model 10
proportions or rates 62
purpose/audience matrix 18, 83
quasi-experimental designs 27
questionnaires 48
random assignment 26
random sampling 32
range 62
records or archival data 49
regression 65
reliability 56
reporting the findings 71
sample size 32
sampling 31
self-report data 48
Social Development Model of Drug Prevention 36
staff input 45
standard deviation 61
statistical significance 64
t-test 65
test-retest reliability 55
threats to internal validity 23
time line 43
time-series designs 27
unanticipated findings 73
unstructured or naturalistic observations 45
validity 56

*U.S. G.P.O. 1987-181-350:63836

DHHS Publication No. (ADM) 87-1512
Printed 1987